An Investigation of 10 Selected Weekly and Small Daily Newspapers Printed by Offset Lithography and Methods and Equipment Used in Their Production

Charles Allen Ridgeway
AN INVESTIGATION OF 10 SELECTED WEEKLY AND
SMALL DAILY NEWSPAPERS PRINTED BY OFFSET
LITHOGRAPHY AND METHODS AND EQUIPMENT
USED IN THEIR PRODUCTION

BY

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This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Adviser Date

Head of the Major Department Date
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CHAPTER I

INTRODUCTION

Reasons for Undertaking the Study

The subject of offset (lithography), whether applied to commercial printing or newspaper production, is a fascinating one. The fascination stems from the fact that offset is perhaps a misunderstood method of producing printing or newspapers. Lithography was invented by Alois Senefelder in 1798, but its acceptance as a major printing process has come only in the last 20 to 25 years. Resistance to change has caused much of the misunderstanding.

The principle on which offset is based is the mutual repellance of water and greasy substances. Offset is basically a photographic and chemical process. Instead of the traditional raised surface, the printing surface of an offset plate is flat. Assuming the correct balance between ink and water is maintained, the image is receptive to ink and the remainder of the plate is receptive to water. The image is then transferred (offset) to a rubber blanket which in turn transfers the image to the paper stock passing through the press.

The rapid strides of offset as a printing process have resulted from improvements in materials and equipment. Improvements have been made in film, paper, chemicals, cameras, presses, and in more scientific knowledge of the process. The rising cost of production and the scarcity of trained help in traditional letterpress methods have been important factors in the growth of offset. New methods of
printing had to be explored since the volume of printing being done was steadily increasing along with the rising population. The profit squeeze caused by increasing production costs, lack of trained help, and increasing costs of equipment caused many publishers, especially the smaller ones, to seek cheaper ways of producing their papers. Offset production has appealed to some of these publishers as a solution to the rising cost of production and equipment. There had been few, if any, major innovations in letterpress equipment since the introduction of the linecasting machine and web-fed, perfecting letterpress in the 1880's. Innovations to the letterpress method were slow because the consumer, printers and publishers, had not demanded a newer process until the growth and inflationary periods following World War II.

Much stress has been put on the benefits and shortcomings of offset newspaper production, but perhaps not enough emphasis has been placed on finding the factors that may help a newspaper determine the feasibility of switching to offset. The purpose of this paper is to attempt to determine from the experience of publishers who have converted to offset what the benefits and shortcomings of offset has been from their experience after the fact.

Does offset offer advantages not found in letterpress? If offset does, to what extent? To what size publisher, if any, is offset most suitable? Some advocates of offset reproduction say that the greatest advantages appear to be in cold type and pasteup of forms. An equipment manufacturer suggests that a great deal of
offset's economy is in composition and makeup:

Many publishers have been able to reduce costs by 15% to 21% in these areas. However, conditions in a plant may make cold type composition impractical. Multiple editions and page makeovers will be a curtailment to larger daily offset conversions for some time to come. (6-73)*

Who is better qualified to answer these questions than a publisher who has faced the realistic problem of having to produce his newspaper by offset? From the experience of such publishers concrete evidence should be available concerning the advantages and shortcomings of offset.

Offset reproduction for newspapers is not inherently the optimum quality process. "Among those knowledgeable in graphic arts today, it is readily conceded that optimum quality is produced by some form of letterpress." (8-72) However, there can be little doubt but what a considerable number of those newspapers which have converted to offset have done so with resultant improvement in reproduction quality over their previous letterpress operations. Just as some offset papers are frightful examples of offset reproduction potential, many former letterpress operations never reached their optimum. This is probably more of an indictment of the lack of craftsmanship among those who previously printed by letterpress or offset than a tribute to the inherent quality of letterpress or

*All citations used in the thesis refer to the appropriate work listed in Literature Cited. The first number refers to the entire work. The second figure which follows the hyphen, when used, denotes the page number.
offset. However, it is not the intent of this paper to advocate one process or the other.

Many publishers originally switched to the offset printing process with the impression that it was cheaper than letterpress. Some publishers have found, to their disappointment, this is not true. In some cases, offset has been more expensive than letterpress. Some have switched because their present equipment had to be replaced and they felt offset offered advantages to them not found in the more conventional letterpress operation. A few publishers have switched because their equipment was worn out and needed replacement, and this appeared to be a good time to switch. Others switched because they felt offset offered more versatility in the use of pictures and greater freedom in the makeup of advertisements.

Objectives of the Study

The primary purpose for undertaking this study was to determine if the experience gained by publishers could be utilized to find better methods of making the transition from letterpress to offset. Another purpose was to find information about production which might prove beneficial to publishers considering offset or publishers who are already using the offset reproduction method. No attempt has been made to formulate a generalized set of guidelines for publishers to follow. Rather, any suggestions made are offered only as useful guidelines if applied to the special conditions and circumstances described. Finally, a further purpose was to
ascertain, if possible, more factual information concerning the conversion to offset.

Publishers realize that factual information is needed to supplement their own evaluations when considering the purchase of new equipment. Salesmen and manufacturers often are the only sources of information on this subject. When a possible sale may hang in the balance, facts may be carefully selected to fit the sales effort. Other publishers may be inclined to advocate either letterpress or offset because they personally prefer, or have had experience with, one process more than the other. This preference is not always based on factual records; often it is an emotional decision.

When changing to a new process, such as from letterpress to offset, factual answers are needed for many questions pertaining to the new process. Failure to factually answer these questions may result in severe financial difficulty or even failure of the business. It is hoped that some of the observations of this thesis may prove revealing and helpful for publishers converting from letterpress to offset.

There have been many articles written in various trade publications concerning offset. Many of these articles have been written by persons who obviously were attempting to establish a point. A spokesman for a leading manufacturer of equipment used in hot metal composition said:
By sticking with hot metal, some of the cost and effort of retraining personnel can be avoided. The publisher also avoids any sudden change in the dress or format of his paper which can be disturbing to some readers. (6-73)

While a consultant for printers and publishers said:

Some publishers feel that savings will come in the composition area on the premise that cold type composition processes can be used for offset and they hold sizable potential cost reductions. Compared to the best that can be developed in hot metal techniques, we have found this to be true. Composition costs probably can be cut but this savings is not tied to offset. (5-55)

The author in many instances represented a company manufacturing either equipment or supplies for letterpress or offset. Many useful and helpful ideas and viewpoints have been explored by the authors; however, they could logically be expected to recommend a product consistent with their own interest.

In order to reduce personal bias, a schedule of identical questions was submitted to each participant. Five of the participants were contacted and a personal interview was arranged; the other five participants were interviewed by means of a mail questionnaire. The same set of questions was applied under both conditions. The publishers were also asked to make open-ended comments on anything they thought would be helpful which was not covered by the questionnaire.

Conclusions or observations drawn are from the information contained in the questionnaires. This writer has had experience working with both letterpress and offset. Though not an expert, he
feels this experience has given him insight into the problems of this study.

Organization and Procedure of the Study

This thesis is an investigation of newspapers now printed by offset. It is a comparatively new and rapidly expanding method of producing newspapers. Many small dailies and weeklies are considering offset, so this appeared to be an area where additional study is needed.

The plants included in the study are typical small weekly and daily operations ranging in circulation on the weeklies from 1,800 to 3,750 and the dailies from 3,600 to 13,000.

The 10 newspapers included represent five states--Iowa, Louisiana, Minnesota, North Carolina, and South Dakota. The information was acquired through personal interview and mail questionnaire. Three of the newspapers were located in South Dakota, three in Minnesota, two in Iowa, one in Louisiana, and one in North Carolina. The sample of papers is not purported to be a random sample of all papers in these states printing by the offset method.

Chapter three of this thesis contains case studies of the 10 newspapers. Visits were arranged with five of the newspapers, and the other newspaper publishers were interviewed by mail questionnaire. A sample of the questionnaire appears in the Appendix. All the newspapers contacted in the first correspondence indicated a willingness to participate in the study. Then a visit was arranged with those
newspapers where the personal interview was used. The primary basis for the use of both the personal interview and the mail questionnaire was a question of cost and travel. If the publisher had time for a personal interview, and the distance from South Dakota State University was not too great, a personal interview was arranged; otherwise a mail questionnaire was used.

The subject matter of this thesis had not been covered in any previous report known to the writer. However, there have been articles published in printing trade publications on various aspects of offset. Also, printing consultants occasionally have published articles suggesting certain guidelines to be considered before converting to offset. But the overall problems of conversion to offset, considered from an objective viewpoint, have not been widely investigated.

Various reasons are given by publishers who have converted to offset. An Illinois publisher said:

When one surveys the machinery market honestly and thoroughly very little has been done in the past 50 years or more to produce a new piece of hot lead casting machinery or letterpress equipment--as we think of it--in the price category that a small publisher can afford. (4-59)

A western state publisher said:

We got tired of training printers for high-wage shops in nearby cities. I don't see much about an offset plant to wear out. With proper care I believe the equipment would last a lifetime. (4-63)

The owner of a central publishing plant in New Jersey said:
The process has a lot of advantages that have been proved over and over. It's cleaner, more flexible, easy to handle, but there's one ingredient more important than these. You've got to think. The letterpress printer handles type, the saw, miterer, and deals in fixed measures as routinely as a robot. Offset will not let you be a one idea man. Offset is for imagination. (4-63)
CHAPTER II

THE PROBLEM

Principle of Offset Printing

Offset printing (lithography) is based on the simple principle that oil or grease will not mix with water. The process involves physics, chemistry, and photography. The photo-chemical process permits the offset printing plate to be flat, whereas in the more traditional letterpress printing process the surface has to be raised. Because of the ink-water balance which is necessary in offset printing, the offset press must have two fountains—one for water and one for ink.

Today's offset plate is comparatively easy and fast to process. The majority of offset plates now in use are presensitized. A presensitized offset plate is one that comes from the manufacturer already coated with a light-sensitive coating which can be developed by exposure to light. The exposure is usually accomplished by the use of a vacuum frame and an arc lamp. The image is transferred to the presensitized plate by film or paper negatives placed over the plate and then exposed in the vacuum frame to the arc lamp. There are offset plates other than presensitized, but they require more training and skill to use. A presensitized plate can be exposed, developed, and ready for the press in less than five minutes.

After the light-sensitive, presensitized plate has been exposed and developed, assuming all the steps were properly performed, it is
ready to be put on the press or to be stored for use later. If the proper ink-water balance is maintained, the silver-gray, non-printing area is receptive to water and the image area, usually red in appearance, is receptive to ink. This inked image is transferred or offset to a rubber blanket from which the image is transferred to the paper as it passes between the rubber blanket and impression cylinder of the offset press.

Typesetting Decisions

Types can be set in a variety of materials and by several processes. The traditional material out of which type used to be made was an alloy commonly referred to as lead, since its composition was primarily lead. Paper, plastics, and photographic films have been added in recent years. The method by which type is set is customarily divided into two classes—hand-set and machine-set type. "Offset is versatile. It can live with both hot and cold composition. Both have advantages to offer." (6-132)

A typesetting decision must be made when a newspaper goes offset. This decision involves quality of work desired, amount of capital or credit available to invest in typesetting equipment, and such other uses as may be made of the typesetting equipment other than its primary purpose of producing type for a newspaper. A leading authority in publishing warned:

Let me note once more that offset is a printing process; it has nothing whatsoever to do with typesetting! That offset and cold type are always equated is a sad situation. Newspapermen ought to be smarter
than to fall into this semantic and logic trap. (3)

Only the facts concerning each particular operation and careful study of equipment available should be used to make a final decision. There are three basic types of typesetting available for offset purposes—hot metal (traditional linecasting machine), cold type, and photocomposition.

Hot metal composition is the old traditional method of setting type. As the name implies the type is cast from hot, molten metal, usually from a keyboard. The three basic hot metal machines used by newspapers today are Intertype and Linotype, which are operated from keyboards, and Ludlow, which uses handset matrices which are used to cast a solid "slug" or line. Foundry type, which is individual type characters, is set by hand by assembling the individual characters in a composing stick held by the compositor. Foundry type is used primarily in the larger type sizes for heads and display composition. It is seldom used for the setting of type in quantity.

If hot metal composition is used for offset, reproduction proofs are necessary in order to make the type ready for the camera or for pasteup prior to going to the camera. A reproduction proof is a proof of the type on paper. If this method is used, it usually requires an additional investment in a reproduction proof press, especially designed for this purpose.

Cold type is that type produced on a prototype of the typewriter. These machines are used to produce type in quantity, in
many instances, with the use of office personnel. These machines can be operated by skilled typists with limited instructions. The high cost of typesetting and the growth of offset have stimulated the greater use of cold type.

Cold type quality, as a rule, is the poorest quality of type when compared with hot metal and photocomposition. Production of type by the "cold" process is possible in many ways. A variety of typewriters and typewriter-type composing machines are available. A few of the more popular makes are Friden Justowriter, Varityper, IBM typewriter, and Remington Carbon Ribbon Electric typewriter. Some of these machines have exchangeable type characters, others do not. Some use the same width for all characters, others differentiate character width in various ways. At this time it can merely be stated that all these machines require two operations for justification. Justification is the process of making all lines come out to the same length on the right side of the line or column.

Photocomposition is type produced on photographic paper or film from characters on film and exposed by camera or other means to the light-sensitive paper or film. These machines vary greatly; some are slow, relatively inexpensive typesetters that produce characters on photographic or light-sensitive paper from film strip characters by exposure to light; others are very expensive, complex models which have cameras and operate at very high speeds. The inexpensive models are usually operated by hand and the more complex models are operated from a keyboard or tape which has been prepunched.
The cheaper models are Filmo, Pro, Fototype, and various others; the expensive, complex models are Fotosetter, Photon, Linofilm, Monophoto, and a new model recently put on the market by Harris-Intertype which probably makes the Fotosetter obsolete. These machines vary in price from a few hundred dollars for the simpler models to a price ranging from $40,000 to $100,000 for the faster, more complex models. The price is determined to some extent by the amount of auxiliary equipment included with the machine. Expensive photocomposing equipment could also mean additional expense in the purchase of needed humidity and temperature control facilities for the plant. Film cannot be properly controlled if temperature control is not possible.

It is difficult to say which type of typesetting is best for offset papers. Many related questions would have to be answered by careful analysis. One of the more important is whether a commercial printing plant is operated in conjunction with the newspaper operation. If it is, what kind of presses are used in this operation? This should not be the deciding factor, but it should be carefully considered. What is the condition of equipment now being used? A leading printing consultant said:

We found justification for a recommendation that composition be hot metal incorporating all the latest means of keeping costs low. These included full scale tape operation of linecasters for straight matter, hot metal pasteup display ads, scheduled page makeup and the like. Obviously, this plant had good hot metal equipment in reasonably good shape. (5-54)

How much capital or credit is available for the purchase of new
equipment? These and other questions must be answered by a publisher considering a change to offset. The decision will probably vary from one publisher to another. Careful analysis should determine the move to be made.

Methods of Makeup

An offset newspaper page can be assembled or put together in one of two ways. The traditional way to assemble a page of hot metal composition is to assemble the type, heads, engravings, and advertisements according to the layout, spacing to justify the page to its proper depth in the chase or a galley. This method requires the following minimum equipment—chase or galley, saw, stone or turtle (work tables), spacing material (leads and slugs), and galleys for type.

A page for offset reproduction can be assembled or put together by the pasteup method. Pasteup is the assembling of the straight matter or body matter, heads, allotment of space for pictures, and advertisements on a master, pre-ruled layout sheet the size of the page to be reproduced. Allotment of space for pictures is necessary since black paper is inserted in the area so that when the negative is made this opening will be transparent. The halftone (which has to be made separately) will be inserted in this space before or after the page is stripped on the flat. The halftone or picture is made by using a fine screen which permits the different gradations of the picture to be possible when the reproduction is made. When
there is type and no picture, this negative is called a line shot; a picture is called a halftone. The majority of newspaper pages would be a combination of line and halftone negatives.

The type for page pasteup can be set by hot metal, cold type composition, or photocomposition; however, if hot metal is used, a reproduction proof will have to be made at some time before it gets to the camera. Some of the proponents of offset reproduction cite this as a possible area of savings in offset. If savings can be made in this area, are they really because of offset or is it because of some other factor? Other proponents of offset cite pasteup in advertisement layouts as another potential area of savings in offset. If they really are legitimate advantages, letterpress technology has given practically the same advantages to letterpress. The letterpress process now has available what is known as cold type pasteup which permits pasting up of advertisements from photocomposition using the powderless etching technique.

If the pasteup method is used, the minimum equipment requirements would be a light table for pasteup, glue or some adhesive for securing the individual pieces to be pasted up to the layout (adhesive wax proof coater is perhaps best), scissors, cutting board, T-square, angles, and ruling pens.

Both the traditional hot metal system of makeup and the newer pasteup methods have their advantages and disadvantages. Which method is best for a particular publisher is difficult to determine. Cost is always a factor involved when considering the move to a new
process. It might be that the publisher is looking for a more efficient method or a method that better fits into his long range plans. A few publishers might even find that it is best to implement a system that utilized the advantages of both processes.

The equipment already on hand in a particular plant will determine as much as any other thing what method of makeup will be used; however, if the operation is entirely cold type or photocomposition, the publisher has no alternative but to use the pasteup method of makeup.

**Camera and Darkroom**

When a paper converts to offset a camera and darkroom are an absolute necessity. This can be an area of considerable expense if the darkroom has to be built and the camera and auxiliary equipment for film development has to be purchased. All darkrooms have somewhat the same layout and equipment within their walls. Processing of photographic materials requires the steps of development, stopping, fixing, and washing. Equipment such as ventilators, safelights, electrical fixtures, and entrances can be very nearly identical in darkrooms whether for hobby, commercial photography, or offset newspaper work.

Darkroom layout is determined primarily by the size of the materials handled and the required flow of work. The format of the newspaper will partly determine the size of camera needed. Developing trays in the darkroom must be large enough to accommodate the
largest size film which is to be used. If the newspaper has commercial offset presses, they must be considered when the camera and darkroom equipment is decided upon. Few newspapers would be concerned with the problem of color process work; so, this should not be a serious consideration for many publishers.

The general physical requirements of a satisfactory darkroom are:

1) The darkroom must be light proof; 2) Both safes and whitelight illumination must be provided; 3) Trays or tanks must be available for holding processing solutions; 5) An accurate thermometer and timer or clock are necessary; 6) A bench-top or wall viewing light should be available; 7) Storage space of the proper type is necessary for photographic materials and supplementary equipment; 8) A drying rack or cabinet will be found useful. (9)

Type and Size of Press Needed

When an offset press is purchased a decision must be made between a sheet-fed or web-fed press. The small weekly publisher has this choice; however, it is doubtful that the daily publisher has any choice other than the faster, web press which will deliver a completely printed and folded newspaper up to the page capacity of the press. From this point the paper is ready to be processed through the mailing department or for newsboys to make home deliveries. The web press is obviously the ideal choice, but the weekly publisher who is less pressed for time can still get by adequately with a sheet-fed press. A spokesman for a leading publisher said:
The type of web offset press to be purchased is determined, of course, by the needs of the printer or publisher. Web offset presses at the present time are much less flexible than sheet-fed offset presses. On sheet-fed presses it is possible to print a wide variety of different classes of work, whereas web offset presses are more specialized. There are, in general, two broad classifications of web offset presses: business forms and publication presses. (10-80)

A factor which limits choice is the amount of capital available or the amount of financing available for purchase of a new press.

Recognizing the fact that if money is not available to purchase the press to adequately fill the needs, it is possibly better to delay a decision pending an improved financial picture.

If capital is not the limiting factor, the publisher should consider press capacity needed now, possible future expansion, work other than newspaper the press may be used for, adaptability to adding additional units (increasing pages it is capable of printing), and any other factors peculiar to his operation. This is essential because:

High productivity of press means that web offset is capable of producing more work in less time, thus reducing cost per job and making more press time available for additional work. (1-82)

The web offset press with folder will produce a finished paper folded and ready for delivery; whereas, the sheet-fed offset press produces a flat, printed sheet which has to go through the press twice and then be folded and collated (folded sheets which are inserted one into the other so the pages are in proper order) to be ready for delivery.
The minimum size of a sheet-fed offset press is determined by the format of the paper. If the format is tabloid, the minimum size is approximately 18x22 inches, which would require a press size of 18x24 inches for running two pages per run. If the format is a standard-size newspaper page, the minimum size would be approximately 22x36 inches. Yet one should not limit his final selection to the format of the paper, especially a weekly publisher who may use the same press for commercial printing. A sheet-fed press can also be purchased which prints four pages at one pass through the press, then prints the opposite side which results in an eight-page signature. The larger size cuts down the amount of time needed for printing, folding, and collating.

The web offset press prints on both sides as the paper passes through the press. The paper is then cut and folded as it goes through the folder. The number of pages that can be printed is limited only by the number of units the press has. Each unit is capable of printing four pages. When a sheet-fed press is used, folding and collating must be done in a separate operation. The folding and collating can be done in one of two ways. First, the flat sheets can be folded and then inserted by hand. The type of folder needed depends on whether the sheets are printed in signatures of four or eight pages. Second, the collating and folding can be done on a combination collator-folder designed especially for this purpose. The sheet-fed offset press requires more operations to produce a finished newspaper; however, the sheet-fed offset press probably
offers more flexibility if commercial printing is done in conjunction with newspaper publishing. When capital is not a factor, circulation and frequency of publication would be important determining factors in making a choice between sheet-fed and web-fed presses. This choice would be determined in no small way by the volume of work done and the deadline required of the publisher.

Offset also requires a grade of paper different from letter-press. The paper used by offset newspapers is called Photo News. Photo News is one-half cent a pound higher than newsprint. The difference in price does not appear significant, but when the amount of paper that can be run through a web offset press in an hour is evaluated it can be highly significant. For example, a six-day daily with a circulation of 15,000 averaging 16 pages uses 3,000 pounds of paper a run or 936,000 pounds a year.1 The difference in cost a year between newsprint and Photo News will be $4,650. A press run of 15,000 takes approximately one hour on a web offset press such as a Cottrell Vanguard 15.

If a web offset press is purchased, a minimum number of units can be purchased and added to as capital or business increase dictates. An offset printing press unit prints four pages per unit. For instance, if two units are initially purchased with the plans

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1 A thousand sheets of 22.5x30 inch, 32 pound Photo News weighs 50 pounds. A 15,000 run of 16 pages requires 60,000 sheets. The weight of 60,000 sheets is 3,000 pounds. The difference in price is based on paper in rolls purchased in carload lots.
for the purchase of two additional units later, a drive system and motor should be initially purchased that will be large enough for four units. "Over 25 percent of a web press total cost is due to auxiliary items such as power drive, electricity, drying, water and air. These costs can be substantially reduced by careful selection and advance planning." (11-54) An air-conditioned pressroom is almost a necessity for adequate press work, and humidity control is also desirable.

Since there are few used offset presses available, a publisher will be almost forced to buy a new press. This can represent his largest single investment in equipment in the entire plant. The minimum price a publisher can hope to pay for an 18x24 inch sheet-fed offset press would be approximately $12,000 to $15,000 (this press could only be used to print a tabloid format); the minimum price for a 16-page web offset press would be approximately $50,000 to $75,000 (this is virtually a necessity for a daily publisher, though in some cases he can start with eight pages). Prices quoted are averages of prices different publishers mentioned as being the cost of their presses. If additional auxiliary equipment is included, the prices will naturally be higher. If used equipment is available the price will be less.

Because the profit margin in printing and publishing is a small percentage of capital investment, extreme caution and dependable forecasting should be used in capital outlay of this magnitude. Sound business judgment and much research should determine if the
change to offset is feasible and sound.

**Availability of Trained Help**

A serious shortage of trained and skilled web craftsmen, particularly of pressmen, exists. Training programs must usually be of the in-plant type, but regardless of where or how obtained, training of web offset pressmen is expensive. (1-82)

A leading web offset printing plant in discussing the problems and disadvantages of web offset said there are simply no trained craftsmen available in the field, because of its extremely rapid and continuing growth. (7-48)

The shortage of craftsmen could result in the pirating of craftsmen from weeklies and small dailies by larger companies. This has happened in letterpress printing in the past; it could very well happen again in offset printing. Use of trained personnel to supervise and instruct untrained workers can impede production and increase cost for the weekly and daily publishers.

After a publisher has made a minimum capital investment of about $50,000, in many instances closer to $100,000, he wants a qualified and competent person to be in charge of this equipment. Some publishers have the manufacturer instruct and train their former letterpress pressmen to operate the web offset. Some manufacturers offer short courses in web offset instruction at their plants of several weeks duration. The capital investment in web offset dictates that the publisher must get the best qualified pressman available to him, even if the worker must have additional training on the job. It should be pointed out that it probably takes less trained personnel to run a single-color newspaper web press than to
run color. Also, it takes more skilled pressmen to run various weights and grades of stock, and make the more complicated folds of book publication or other commercial work performed on a web offset press. Newspaper press work is more of a repetitive operation.

Page pasteup, cold type composition, camera, and platemaking probably require less extensive training than does similar work in the letterpress process. Many of the advocates of offset make this claim; however, the quality of work required of a worker would determine the accuracy of this claim. Leading authorities in the printing industry are in disagreement on this point. When only average offset newspaper quality is demanded, as opposed to more demanding tolerances of other type work, it is generally agreed that cold type and pasteup are areas of potential savings in offset production. The availability of skilled craftsmen, and the retention of these craftsmen, could be an important factor in converting to offset and deciding whether or not to use cold type composition. If offset provides the small publisher with the financial means to pay his employees better and make them less susceptible to offers from other publishers after they are trained, then this is a plus factor for offset.

The small publisher will probably have to train his own employees for offset. He should be able to train his former letterpress employees with a minimum of waste since they are already familiar with many of the problems of printing. They primarily will have to be taught the new skills needed for offset; many of the
same skills used in letterpress are applicable in offset. Balance, proportion, and good layout are the same regardless of whether they are used in offset or letterpress.

**Reader Reaction to Offset Methods**

There has been very little, if any, research done to ascertain reader reaction to cold type composition used in offset newspaper production. Will the reader be receptive to the new method of production? With other media competing for the advertising dollar and the reader's attention, the publisher should give serious consideration to potential reader reaction, especially when the method of setting body matter is changed from hot metal composition to cold type composition. It is generally agreed in the publishing industry that the quality of cold type is not equal to that of hot metal and photocomposition. A publisher said:

> Our goal must remain a quality product. Typographic excellence does contribute to readership. That is a major factor in lineage. More important, the quality of an individual newspaper not only rebounds to its own glory—and economic health but also to every other hometown newspaper. (3)

Perhaps the average reader cannot distinguish between cold type and hot metal composition, or, perhaps, the difference may be detectable but unimportant to him.

> What are other possible areas of reader reaction to offset production other than type faces and methods used to produce them? If the printing quality of a letterpress newspaper was good and it converts to offset and uses the same type face as in the letterpress
operation, it is doubtful that the average reader will notice the
difference. However, when an offset press is installed in a plant
that formerly printed letterpress it is usually because the letter-
press equipment was old and in some cases its printing quality poor.
Therefore, many papers that have converted to offset have done so
with resultant improvement in printing quality, especially in pic-
ture reproduction. It is doubtful that improved quality can be
attributed to offset as much as to the replacement of the poor equip-
ment or to the lack of craftsmanship of the former letterpress
operation.

The publisher should not switch to offset just to appear pro-
gressive, but if he switches to offset it should be because his
research and evaluation indicate it will strengthen his publication
against competition by holding readers and attracting more adver-
tisers. For example, if more photographs can be used by offset proc-
ess than with letterpress at approximately the same cost, this would
be a plus factor for offset. Since an engraving is not necessary
in the offset paper, it is possible that by having a self-contained
plant the publisher will be able to give his readers and advertisers
more current picture coverage on late breaking news and more pro-
motional features for advertisers. This is not to imply that many
letterpress newspaper plants are not self contained, but many of the
smaller letterpress publishers have to depend upon commercial engravi-

ing plants for their engravings. Letterpress publishers are limited
in their use of pictures because of the cost involved and the time factor of having to depend upon an outside source.

The advocates of offset further claim they can indulge in more spectacular layouts full of angles, interlocking boxes, and the like which are comparatively easy to do in paper pasteup.

Expansion Potential and Commercial Printing Possibilities

If a publisher is seriously considering web offset, it is probably because he has to replace his present press; or his equipment is still adequate and he has profit or quality objectives. Does offset necessarily offer the advantages to accomplish these objectives? The publisher and his staff should carefully separate facts from fiction concerning offset and its expansion potential as well as explore commercial printing potential on the equipment under consideration.

If offset is being considered primarily because it possibly offers opportunity for expansion and commercial printing possibilities, the publisher should first evaluate his present staff and determine if this staff will be adaptable to the new expansion program being considered. Will the staff have to be enlarged? If so, can qualified and trained people be obtained or will they have to be trained? Is it financially feasible for the company to undertake an expansion of this magnitude? Does the company have adequate working capital or loans available to see it through the transition period?

If the publisher goes offset and has firm commitments to print
other papers, can this increased volume be handled in the existing physical plant? If this means increased physical plant needs, can the present building be renovated to handle the increased volume or will a new location have to be sought in order to have enough space and have the needed facilities available? If volume is increased tremendously, storage, shipping, and receiving facilities will have to be provided to handle this increase. Will the location permit the company to take advantage of the cheapest means of transportation available in the locality? Will the present work force be retrainable for offset production or will new people have to be sought? These questions can only be answered after careful evaluation coupled with the conditions surrounding the particular plant in question.

The market potential of the company must be carefully and realistically appraised. A printing spokesman said:

In all cases, whatever the range or type of work you propose to produce by web offset, do not speculate. Tie up some solid, projected and profitable accounts before attempting to buy. (10-81)

Every means available should be explored to gather information concerning the present and future growth of the locality in question. Does its present and future economic growth potential make feasible the investment of the capital necessary to undertake the expansion program? Every business venture carries a certain amount of risk, but if careful evaluations are made from reliable information, then the risk involved can be reduced.
Financial Condition of Newspaper and Sources of Financing

A small newspaper plant's cost for conversion from letterpress to full offset will run from $55,000 to $71,000, according to estimates presented at the California Newspaper Publisher's Association Newspaper Workshop.

The expenditure will vary with local plant conditions but will be determined chiefly by the number of press units purchased—with the higher figure representing a three-unit press.

The figures were provided from two plants basically operated to produce only their own paper. Both moves were spurred by growth needs. One plant reported a 426 percent profit from its well-timed move which enabled a 25 percent boost in weekly page output.

The Sonoma (California) Union-Democrat investment was $56,000. Most of the new equipment cost of $43,000 went for a two unit Vanguard press to print a small daily paper. (2)

Most small publishers are not able to make cash outlays of this size, so in most instances financing will have to be arranged through some lending agency. The primary sources of financing available to publishers are banks, other lending institutions, and friends. In some cases the manufacturer will finance part of the purchase price. Part of the cost can be obtained from the sale of old equipment. Hopefully, there would be a depreciation reserve to cover part of the financing. In order to secure a loan of this size a publisher will have to show the new venture is a sound business venture. If the operation is a small volume operation, he may have to show that additional work can be obtained to supplement the hours the press will be used or that the increased press speed and size will allow him to significantly add to his advertising lineage to
cover the additional expense incurred by the new capital outlay.

Figuring only on the depreciation involved in estimating hour cost, what would it cost to recover depreciation? There would also be additional factors of efficiency, labor, payroll expenses, occupancy expense, indirect labor, taxes, interest on investment, maintenance, and utilities besides the depreciation reserve. Hour cost for actual time used for single weekly publication is almost prohibitive, especially when based on the 1962 Treasury Department accelerated depreciation write-off of 11 years for printing equipment. For example, if an 18x24 inch sheet-fed offset press were purchased at $18,000, approximate price on the market, and if it were used only two hours per week to print a weekly publication,\(^1\) it would cost $8.47 per hour just to recover depreciation over 11 years. True, this example may be exaggerated, but in some plants this situation actually exists.

What would happen if the press could be kept busy as much as 30 hours per week? If the press were used 30 hours per week\(^2\) the depreciation recovery could be reduced from $8.47 to $1.05 per hour. The more hours one can use the press the cheaper hour cost will be.

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\(^1\) Two hours per week times 52 weeks per year times 11 years divided into $18,000 equals $8.47 per hour based on 2 hours press usage per week.

\(^2\) Thirty hours per week times 52 weeks per year times 11 years divided into $18,000 equals $1.05 per hour based on 30 hours press usage per week.
For a sound business investment it is almost imperative that a publisher of a weekly find additional work to increase his usable press time. Admittedly, a free press carries certain responsibilities, but when a publisher makes an investment in new equipment he should also expect to receive a reasonable return on his investment.

If the press were a three-unit web offset with a market value of $50,000 used one hour daily for a press run on a daily,¹ the depreciation over an 11-year period would be $12.49 per hour. The figures were arrived at by using the straight-line depreciation method with no salvage value. If the press could be used 30 hours per week, the cost of depreciation would be reduced to $2.91 per hour based on 30 hours press usage per week. To secure financing these and other questions would have to be answered before a loan would be granted by any progressive lending agency.

For a company to secure a loan with favorable interest rates, it should have either adequate advertising lineage to make the purchase practical or find adequate commercial printing to do when the press is not being used to print its own newspaper. For a daily, increased advertising lineage may make the investment feasible. For a weekly using a sheet-fed press, the press will probably have to be used for other work to make it a financially sound investment.

¹Seven hours per week times 52 weeks times 11 years divided into $50,000 equals $12.49 per hour based on 7 hours press usage per week.
CHAPTER III

THE SITUATION

The De Smet News, De Smet, South Dakota
(Source of information: personal visit)

The De Smet News is printed weekly, and has a standard newspaper page format. Circulation is 1,800. The publisher is Aubrey Sherwood, who supplied the following information.

The newspaper is printed on a Harris S7L, which is a sheet-fed offset press, and has a maximum sheet size of 36x46 inches. Four standard-size newspaper pages can be printed at a time on one side of the sheet only. With two passes through the press eight pages can be printed. After the paper is printed it must be folded and then collated if more than eight pages are in an edition. (Collating is the assembling of the separate pages so they will be in proper order.) The publisher had an offset press in his commercial printing department before the offset press was purchased for the newspaper. Experience gained from the offset press in commercial printing was an influence in converting the newspaper to offset reproduction. The newspaper press was purchased used. The pressman had duties other than operating the press. The press is used four hours a week, approximately, for the newspaper. Amount of commercial work done on the press varies from week to week.

Composition is hot metal. Page makeup is by the pasteup method. A used Model 8 Linotype has been purchased since the offset
press was purchased; type is set on two Linotypes. Display type is set in foundry type and proofed before the advertisements are pasted up. Some of the multiple-column cutlines are set on a typewriter. This publisher feels that hot metal composition is superior to cold type for straight matter.

The publisher reported that the condition of letterpress equipment was good. The press was too slow and too much time was consumed in press work for a weekly publication. Replacement cost for offset was greater than it would have been for comparable letterpress. Prospects of improved picture reproduction as well as the greater use of pictures were influencing factors in the conversion to offset.

Circulation has increased slightly since the conversion to offset. Advertising lineage has increased; this increase is attributed to aggressive selling. Reaction by advertisers and subscribers to offset has been favorable. Conversion to offset was well publicized before the change was made.

Management did a great deal of research before making the conversion to offset. Because of research, the management felt they knew what offset had to offer, and they were not getting on the conversion-to-offset bandwagon just to appear progressive. Information for evaluations came from correspondence with manufacturer and consultation and visits with other publishers who had converted to offset. Management feels offset has made them more quality conscious.
Employees offered no resistance when the company decided to convert to offset. The management kept employees informed as to what its plans were concerning offset and that all employees would be retained in the offset operation. Retraining of employees was not difficult. No new employees have been hired since converting to offset. Some of the employees had offset experience prior to the conversion because of the offset press in the commercial printing department. The management feels that new interest has been aroused in employees because of offset. There has been no personnel turnover since converting to offset. The company has the same number of employees for offset as it did for letterpress.

This publisher did not convert to offset because he thought it was a cheaper process. He has found that offset is not any cheaper than letterpress, but his volume of business is increasing. If he had the decision to convert to offset to make again, his decision would be the same. Employees are paid the same for offset as they were for letterpress.

Management is sold on the versatility of offset especially the freedom it gives in layout. The publisher said, "Conversion to offset has produced a boon which was worth the cost." Readers especially seem to appreciate the pictures produced by offset.

The Forrest City Summit, Forrest City, Iowa

(Source of information: mail questionnaire)

The Forrest City Summit is printed weekly, and has a standard
newspaper page format. Circulation is 3,750. The publisher is Ben Carter, Jr., who supplied the following information.

The newspaper is printed on a Harris S7L, which is a sheet-fed offset press. Maximum sheet size of the press is 36 x 48 inches. Four standard-size newspaper pages can be printed at a time on one side only. Two passes through the press produces eight pages. After the paper is printed it must then be folded and collated in separate operations. The paper had no commercial offset presses until the offset press was purchased to print the newspaper. The press was purchased new. The pressman has duties other than operating the press. The press is operated approximately 12 hours a week. Five publications are owned by this publisher of which only one is a newspaper. All the publications are printed in the newspaper plant. Commercial printing is done in addition to his own publications.

Composition is cold type. A Friden Justowriter is used for straight matter composition. No mention was made of what type of equipment was used for display composition. Page makeup is by the pasteup method. Management feels the Friden Justowriter is the best machine on the market.

The publisher reported that the condition of the Linotype and Ludlow and press was good and poor respectively. Letterpress equipment had been completely depreciated. However, the depreciation reserve was not available for the purchase of new equipment. The publisher reported that replacement cost would have been greater for letterpress if they had gone to a flatbed, web letterpress. However,
it is probably not a fair comparison when one compares a sheet-fed press with a web press. Prospects of improved picture reproduction was an influencing factor in the decision to go offset.

Circulation has increased 15 percent since the paper converted to offset printing. It is not known whether this increase is attributed to offset, natural growth or other factors. Advertising lineage has increased since the paper converted to offset. Reaction of advertisers and subscribers to offset has been favorable. Many people have commented on improved readability of the paper. The publisher commented that girls who are about to be married and their families, even those on the fringes of his circulation area, all want wedding pictures printed in his paper "because the pictures look so nice."

The publisher reported that older employees discouraged conversion to offset, and younger employees encouraged conversion to offset. Retraining of employees was not difficult with the exception of one older printer. When new employees are hired they are mostly women and they are trained in the plant. The only person with prior experience with offset was the publisher whose hobby was photography. There has been no personnel turnover since the paper converted to offset. The newspaper had 16 employees for letterpress; they now employ 22 with offset.

The publisher converted to offset because he felt it was a step forward, plus the fact that some of their publications other than newspapers lent themselves to offset. Offset printing for this
publisher has been less expensive than it was for letterpress. If he had the decision to convert to offset to make again, his decision would remain the same. The publisher said that Linotype operators were replaced with part-time women who were trained typists, but no mention was made whether they were paid the same or less than the Linotype operators.

The publisher said, "I'm an offset booster." They have found that about 85 percent of their commercial job work now goes offset.

Garretson News, Garretson, South Dakota

(Source of information: personal visit)

The Garretson News is printed weekly, and has a tabloid format. Circulation is 2,500. The publisher is C. D. Sanders, who supplied the following information.

The newspaper is printed on an Aurelia Commander, which is a sheet-fed offset press. The press has a maximum sheet size of 18x24 inches. Two tabloid-size pages can be printed at a time on one side of the sheet only. With two passes through the press four pages can be printed. Folding and collating is done on a combination collator-folder which will collate and fold simultaneously up to sixteen pages. If more than sixteen pages are in an edition, additional collating has to be done by hand. The publisher had an offset press in the commercial printing department prior to the purchase of the newspaper offset press. Experience with offset in commercial printing had some influence on his decision to convert to offset. The
newspaper press was purchased new. The pressman has duties other than the operation of the press. The press is used about 30 hours a week for newspaper production; then other commercial work is done on the press when it is not being used for the newspaper. This publisher owns and publishes two papers: the Garretson News and The Suburban News. He contracts to print newspapers for two other publishers. A four-page supplement, World Scene, is printed monthly that is used by this publisher and one other nearby publisher.

Composition is both cold type and hot metal. Page makeup is by the pasteup method. Linotype and electric typewriter is used for straight matter. Foundry type is still used for display composition. It is set and then proofed and pasted up. The publisher indicated that Friden Justowriters might be considered in the future. Management feels the machines they are now using are the best available to them.

The publisher reported that the letterpress equipment had been completely worn out. The letterpress equipment had been fully depreciated. However, depreciation reserve was not available for the purchase of new equipment. The publisher said that replacement cost for offset was about the same as it would have been for comparable letterpress equipment. Prospects of improved picture reproduction influenced the decision in only a limited way.

There has been no negligible increase in circulation since the paper converted to offset. Advertising lineage has not increased on the Garretson News; however, the newer Suburban News has
experienced an advertising lineage increase, but this is not attributed to offset. Reaction of advertisers and subscribers to offset has been favorable.

Management feels they knew what offset was and were not getting on the conversion-to-offset bandwagon to appear progressive. Management feels offset has made them more quality conscious.

This is a family business, so there was no resistance to the conversion to offset. Retraining of employees has not been difficult. New employees were trained by the company with the exception of an experienced offset pressman. Some members of the staff had had previous experience with offset or photography. There has been no turnover in personnel since the newspaper converted to offset.

Conversion to offset was not made because they thought offset was a cheaper process. They have found that offset is more expensive than it was for the former letterpress operation. If the decision had to be made over whether to convert to offset, the decision would remain the same. Employees are paid the same for offset as they were for letterpress.

Madison Daily Leader, Madison, South Dakota

(Source of information: personal visit)

The Madison Daily Leader is printed daily, except Saturday and Sunday, and has a standard newspaper page format. Circulation is 3,600. The publisher is Merrill Hunter, who supplied the following information.
The newspaper is printed on a Goss Community, which is a web offset press. The press is made up of two units, which makes it capable of printing and delivering completely folded an eight-page, standard-size newspaper. The paper had an offset press in its commercial printing department prior to converting the newspaper to offset, and this influenced the decision to convert the newspaper to offset production. The press was purchased new. The pressman has duties other than operating the press. The press is operated between 10 and 15 hours a week. Other commercial printing is done on the press; however, none of this work is newspaper production.

Composition is hot metal. Since the hot metal linecasting machines were still in good condition, the decision was made to continue using hot metal for composition. The company has one Linotype and four Intertypes. Management is undecided as to whether these are the best machines available for composition. Offset was installed because the publisher felt he would be in a better position for the future. Makeup is conventional—the makeup man blanking out for pictures and pasted-up advertisements. Management feels they are using what they consider to be the best advantages of both offset and letterpress.

The publisher reported that the condition of the Duplex flat-bed was good. The Goss Community offset was more expensive than a comparable web letterpress press would have been. The publisher hoped to get improved picture reproduction with offset. He also hoped to make greater use of pictures with offset without any
additional expense above what it had been for letterpress.

Circulation has increased since the paper converted to offset. Increase is attributed more to improved news coverage. Advertising lineage has not increased. Reaction to offset printing methods has been very favorable by advertisers and subscribers. The conversion to offset was well publicized and advertised in the paper before the change was made. The management mentioned one publisher who experienced a critical reader reaction to offset. Criticism was directed primarily at the use of cold type, which had been substituted for hot metal composition.

Management felt they really knew what offset was and what its advantages and disadvantages were, and did not get on the conversion-to-offset bandwagon just to appear progressive. Management gathered information to make their evaluation from salesmen, correspondence with manufacturers, consultation and visits with other publishers who had converted to offset, trade magazines, and mechanical conventions. They feel offset has made them more quality conscious.

Majority of employees were in favor of changing or made no attempt to sway the publisher from going ahead with his plans to convert to offset. Retraining of employees for offset was not difficult. Since the management retained part of its letterpress equipment, this retraining was restricted to a few employees. No new employees have been hired. Some employees had had previous offset or photography experience before the newspaper was converted to offset. The
publisher feels it has been easier to keep trained, qualified employees than it was for letterpress. The newspaper had 23 employees for letterpress, and it has 22 employees for offset.

The publisher thought offset would be less expensive than his former letterpress operation. Offset has not been less expensive. However, he thought it would be cheaper if the newspaper took advantage of composition savings possible, namely, cold type composition and cheaper labor for the operation of these machines. If he had the decision to make again on whether to convert to offset, the decision would be the same. Employees are paid the same wages for offset as they were for letterpress.

The publisher said perhaps the newspaper might convert to cold type composition in the future. He feels the greatest savings in offset will be in the makeup of advertisements; ranking second is the makeup of pages. The newspaper is able to make greater use of pictures with offset.

Marshall Messenger, Marshall, Minnesota

(Source of information: mail questionnaire)

The Marshall Messenger is printed semi-weekly, and has a standard newspaper page format. Circulation is 4,700. The publisher is Don Olson, who supplied the following information.

The newspaper is printed on a Cottrell Vanguard, which is a web offset press. The press is made up of three units, which makes it capable of printing and delivering completely folded a 12-page,
standard-size newspaper. The press was purchased new. The pressman has duties other than operating the press. The press is operated five hours a week. Three weeklies are printed for other publishers, and other commercial printing is done on the press. No mention was made of the type work this was.

Composition is both cold type and hot metal. Type machines used are Friden Justowriters and Photo Typositor; the trade name of the hot metal machine was not listed. Management feels these are the best machines on the market for the price. Technically, the Photo Typositor is a photocomposing machine. Page makeup is by the pasteup method.

The publisher reported that condition of letterpress equipment which was replaced had been poor. Equipment had not been completely depreciated. Depreciation reserve was available for the purchase of new equipment. The publisher reported that the offset press was more expensive than it would have been for comparable letterpress equipment. Improved picture reproduction was one of the factors that influenced the publisher to make the conversion to offset.

Circulation and advertising lineage has not increased since conversion to offset. Reaction of advertisers and subscribers to offset was favorable.

The publisher studied offset for two years before he made the conversion to offset. Because of this study he felt that he knew offset potential. The publisher gathered information to make his
evaluation from salesmen and consultation and visits with other publishers. He feels offset has made him more quality conscious.

Some employees encouraged and others resisted the change to offset. The majority accepted it. Retraining of employees was not difficult. The publisher reported that hiring of new employees with offset experience had not been difficult. None of the employees had had any previous offset or photography experience. The publisher has found no difference between offset and letterpress in the retaining of trained, qualified employees. There has been little turnover since the conversion to offset. There were 11 regular and six part-time employees for letterpress and only eight regular and five part-time employees for offset.

Conversion to offset was made originally with the idea in mind that it would be cheaper. Since the conversion to offset, the publisher has found presswork to be more expensive; but he has found savings in the area of composition with the use of cold type. Totally, the cost of offset has been cheaper. If the decision to convert to offset had to be made again, the decision would remain the same. Some employees are paid more for offset than they were for letterpress; others are paid less.

Mount Olive Tribune, Mount Olive, North Carolina

(Source of information: mail questionnaire)

The Mount Olive Tribune is printed semi-weekly on Mondays and Thursdays, and has a standard newspaper page format. Circulation
is 2,500. The publisher is Cletus Brock, who supplied the following information:

The newspaper is printed on a Goss Suburban, which is a web offset press. The press is made up of three units, which makes it capable of printing and delivering completely folded a 12-page, standard-size newspaper. An A.B. Dick offset press was in the commercial printing department of the newspaper prior to converting the newspaper to offset; this had no influence on their decision to convert the newspaper to offset. The publisher converted to offset to increase production. The press was purchased new. The pressman, in addition to his duties as pressman, does page makeup, plate-making, negative preparations, and other work when time permits.

Press is operated between six and 12 hours a week, depending on what week of the month it is. In addition to their own semi-weekly, they print ten other weeklies, one bi-monthly, one college weekly, and one high school newspaper. Circular-type commercial work is done for both merchants and other printers.

Composition is both cold type and hot metal. A Friden Jumbowriter is used for straight matter composition. Filotype, a form of photocomposition, is used for heads and display type. Linotype is used to set outlines, editorials, and classifieds. Linotype is also used for work in the commercial job department of the newspaper. Page makeup is by the pasteup method. Advertisements are assembled by both pasteup and the traditional method.

The publisher reported that letterpress equipment was in
excellent condition. Letterpress equipment was not fully depreciated. However, the depreciation reserve was not available for the purchase of new equipment. Replacement cost for offset on some items was more than it would have been for comparable letterpress; on others less. Prospects of improved picture reproduction had no influence on their decision to convert the paper to offset. The publisher reported they were already getting excellent picture reproduction, as well as excellent presswork, and making halftones in their own photoengraving plant. The principal reason for switching to offset was the need for more production than they could get out of their letterpress equipment. More letterpress equipment would not have solved the problem, because they would have been faced with the problem of securing the right kind of labor, and holding them in a small town.

Circulation has not increased. Advertising lineage has increased, but not tremendously. Growth appears to be steady. Reaction of advertisers and subscribers to offset has been very favorable.

The publisher made every effort to know what offset was. He studied the problem for more than a year before ordering the press. His greatest sources of information before converting to offset were manufacturers and visits with other publishers who had converted to offset. Offset has not made them any more quality conscious. The publisher reported he had always tried to be as quality conscious as possible.

Employees were very happy and cooperative about the changeover
to offset. The floorman is still making up advertisements for offset by stripping them up. In addition, he has become their plate-maker and does some page camera work. One Linotype operator is still operating the one Linotype. In addition, he does page pasteup, and sets heads on the Filbertype. Employees are versatile enough that they do whatever job there is to be done. Retraining of employees for offset met with no difficulty. They were interested in the new process. The company has not hired or tried to hire any skilled employees since the conversion to offset. The publisher had had 25 years of experience as a photographer and photoengraver, and another employee had been a photographer for several years. The newspaper had an A. B. Dick offset press in its commercial printing department prior to converting to offset. The publisher had no previous problem of keeping trained help; however, it has been easier to obtain trained typists for cold type than it was Linotype operators for letterpress. There has been no personnel turnover since the newspaper converted to offset. The company had nine employees for letterpress. They now have 12 employees plus a part time employee who does janitorial work.

The management did not convert to offset because they thought it was cheaper. They have found that offset is not any cheaper. They are able to produce a greater volume through the use of offset than they were for letterpress. Management feels the only savings in offset would be through the use of cold type and cheaper labor. If the decision to go offset had to be made over, the decision would
remain the same. Employees are paid the same for offset as they were for letterpress.

New Ulm Journal, New Ulm, Minnesota

(Source of information: mail questionnaire)

The New Ulm Journal is printed daily, except Sunday, and has a standard newspaper page format. Circulation is 10,000. The publisher is W. K. Mickelson, Jr., who supplied the following information.

The newspaper is printed on a Goss Suburban, which is a web offset press. The press is made up of five units, which make it capable of printing and delivering completely folded a 20-page, standard-size newspaper. The newspaper does not have a commercial job printing department; therefore, they did not have any offset presses in their plant prior to converting the newspaper to offset. The press was purchased new. The pressman has no duties other than operating the press. The press is operated 12 hours a week to print two six-day dailies. The Fairmont Daily Sentinel is printed in the same plant as the New Ulm Journal. Circulation of the Sentinel is 13,500. Other small run newspapers are printed here in addition to the two six-day dailies.

Composition is cold type and photocomposition. A Friden Justo-writer is used for straight matter, and the type of machine used for photocomposition was not given. Page makeup and advertisements are both done by pasteup. The publisher does not feel this is the best equipment on the market for this purpose. He reported it was
financially impossible for him to purchase the equipment he thought best.

The publisher reported that the condition of letterpress equipment before the changeover was excellent. The letterpress equipment had not been fully depreciated. Depreciation reserve was available when the offset equipment was purchased. The publisher reported that offset replacement was less than what comparable letterpress equipment would have cost. Prospects for improved picture reproduction and better printing influenced the decision to convert to offset.

Circulation and advertising lineage have both increased since the conversion to offset. The publisher did not mention whether this increase was attributed to offset or other factors. Reaction of advertisers and subscribers to offset has been favorable.

The publisher felt he really knew what offset was, and he was not just trying to appear progressive. Greatest source of information for the evaluation to convert to offset was consultation and visits with other publishers who had converted to offset and conventions. The publisher reported offset has made his newspaper more quality conscious.

Employees did not show any resistance or encouragement to the conversion to offset. Retraining of employees has not been difficult. The company trains its own labor force. Only one employee had any previous offset experience and that was very limited. The publisher reported it has been easier to keep trained, qualified employees
with offset. There has been little turnover since the conversion to offset. The Journal had 17 employees for letterpress and they have 11 for offset. The Sentinel had 14 employees for letterpress and they have 13 for offset. These are mechanical department employees only. No mention was made of the possibility of work that had been done by mechanical department employees being transferred to the advertising department, which often happens on newspapers that convert to offset.

The publisher had been told that offset printing would be cheaper than letterpress. However, he has not found this to be true. If he had to make the decision again to convert to offset, it would remain the same. Some employees are paid more and some are paid less than they were for letterpress.

Opalousas World, Opalousas, Louisiana

(Source of information: mail questionnaire)

The Opalousas World is printed daily except Saturday and Monday, and has a standard newspaper page format. Circulation is 12,500. The publisher is Roy Thistlethwaite, who supplied the following information. This newspaper has been printed by offset since its inception in 1939, which makes it one of the pioneer offset newspapers.

Since the newspaper started with offset and did not convert to offset, some of the questions asked in the questionnaire will not be applicable.

The newspaper is printed on a Goss Suburban, which is a web
offset press. The press is made up of four units, which makes it capable of printing and delivering completely folded a 16-page standard-size newspaper. The original press was purchased new. The press presently being used was purchased used. The pressman had no duties other than operating the press. The press is operated approximately 16 hours a week. Papers other than the World are printed in the plant, and commercial printing is done when it is of the type than can be printed on a web offset press.

Composition is a combination of cold type and hot metal. Cold type is used for straight matter, and hot metal is used for heads and advertisements. Management feels this was the best equipment on the market for the amount of capital they had to invest in equipment. However, this statement was qualified somewhat with the stipulation that either Linofilm or Photon would probably be better for advertisements and heads but too expensive for the company to consider. Page makeup is by the pasteup method.

The World has 46 employees.

Sioux County Capital, Orange City, Iowa
(Source of information: personal visit)

The Sioux County Capital is printed weekly, and has a tabloid format. Circulation is 2,400. The publisher is Wayne Stewart, who supplied the following information.

The newspaper was converted to offset before the present publisher took over its publication. Some of the questions could not
be answered because he did not have the information sought.

The newspaper is printed on a Harris 57L, which is a sheet-fed offset press. Maximum sheet size of the press is 36x48 inches. Four standard-size or eight tabloid-size newspaper pages can be printed at a time on one side of the sheet only. Two passes through the press produce either eight standard-size newspaper pages or 16 tabloid-size newspaper pages. The pressman has responsibilities other than operating the press. The press is operated approximately seven hours a week. A college paper and magazine, and bowling sheets are printed on the newspaper press.

Composition is a combination of cold type and hot metal, and photocomposition. Friden Justowriter, Linotype, and Pro-Type are used for composition and display. Page makeup is by the pasteup method. Management feels typesetting equipment is the best on the market for its purpose.

Circulation has increased, but this is attributed to natural causes, not offset. Reaction of advertisers and subscribers to offset has been favorable.

Hiring of new employees with offset experience has been difficult. The newspaper has seven regular and four part-time employees.

Management feels offset can be less expensive under certain conditions, especially in the area of makeup and the use of cold type.
Worthington Globe, Worthington, Minnesota

(Source of information: personal visit)

The Worthington Globe is printed daily, except Sunday, and has a standard newspaper page format. Circulation is 13,500. The publisher is V. M. Vance, who supplied the following information.

The newspaper is printed on a Cottrell Vanguard which is a web offset press. The press is made up of five units, which makes it capable of printing and delivering completely folded a 20-page, standard-size newspaper. The newspaper had a Multilith in its commercial printing department prior to converting the newspaper to offset, but this had no influence on their decision to convert the paper to offset. The press was purchased new.

The company had on order a new offset press to replace the one they are now using. The Cottrell Vanguard 15 is being replaced with a Cottrell Vanguard 22. The Cottrell Vanguard 22 is 40 percent faster, has better web tension control, has the heavy duty jaw type folder, and is superior to the Cottrell Vanguard 15 for process color printing. The Cottrell Vanguard 22 will contain six units or 24-page capacity. Management remained with the same press manufacturer because they were well pleased with their original press. The new press was purchased primarily for the improved features it possessed and increased page capacity. The pressman has no duties other than the operation of the press. Press is operated approximately 10 to 12 hours a week. The newspaper prints two shoppers in addition to their own paper. A shopper is an advertising paper
that closely resembles a newspaper.

Composition is a combination of cold type and hot metal. The company uses Linotypes, Varityper, and Photo Typositor. The Photo Typositor is a photocomposing machine. The publisher prefers hot metal composition for straight matter. Pages are made up in forms, and reproduction proofs taken. Space for pictures and advertisements are blanked out, except for those advertisements which are made up in hot metal. They are inserted when the page is made up. Management feels they are taking advantage of the best features of both letterpress and offset. The Vari typography and Photo Typositor are used primarily in straight matter and display for advertisements.

The publisher reported that condition of the replaced letterpress equipment had been good. The paper was winning awards when the equipment was sold. Letterpress equipment had not been fully depreciated. Depreciation reserve was not available when the new offset press was purchased. The publisher estimated replacement cost for offset was at least double what it would have been for comparable letterpress equipment. Improved picture reproduction was a factor in the conversion to offset; however, it was not the deciding factor.

The circulation has increased since the paper converted to offset; however, growth is attributed more to natural growth than to offset. Advertising lineage has increased, but this is due largely to the addition of a Saturday paper. The advertising rates have
also been increased. The publisher feels the advertiser is getting more for his money with offset. Reaction of advertisers and subscribers to offset has been favorable.

After thorough study the publisher felt he knew what to expect from offset. The management failed to run into as many problems as they anticipated with offset. Sources of information this publisher used to gather information in his evaluations for offset were consultation and visits with other publishers who had converted to offset, trade publications, and correspondence with manufacturers (he considered correspondence with manufacturers a poor source). The salesman was called when the decision had been made to convert to offset. The publisher feels he has always been quality conscious, and awards won by the paper back up his contention.

The publisher reported that he received 100 percent cooperation from the employees when the paper decided to convert to offset. The company has a pension plan for employees, and employees are carefully screened before they are hired. Because of progressive management and liberal employee benefits, the company has always had a limited amount of labor turnover. The Globe had one of the cleanest, if not the cleanest, plants ever observed by this writer. No difficulty was encountered in the retraining of employees. No new employees have been hired since the paper converted to offset. One employee had previous offset experience and several employees had photography experience when the paper was converted to offset. The company had 35 employees for letterpress; after converting to offset,
they still have 35 employees.

The publisher did not convert to offset originally with the idea that it was a cheaper process, but he hoped it would be. He has found that offset is not a cheaper process. The publisher feels the biggest potential savings in offset would be in resorting to cheap labor and cold type. If the publisher again had to make the decision to convert to offset, his decision would be the same. The wages for offset are the same as they were for letterpress.
CHAPTER IV

SUMMARY, CONCLUSIONS, HYPOTHESES

The type press and typesetting used by the various publishers varied but appears to follow a pattern.

Six web and four sheet-fed offset presses are used by the 10 daily and weekly publishers. The six web offset presses are used by the daily and semi-weekly publishers. Five of the presses were purchased new, one used. The four sheet-fed offset presses are used by weekly publishers. Three of the sheet-fed presses were purchased used, one new.

Page capacity of the web offset presses ranged from eight to 20 pages. The web offset presses are a two unit Goss Community, a three unit Goss Suburban, a three unit Cottrell Vanguard, a four unit Goss Suburban, a five unit Goss Suburban, and a five unit Cottrell Vanguard.

Sheet-fed offset presses are used by the four weekly publishers. Sheet size of presses ranged from 18x24 inches to 36x48 inches. Size and name of presses are 18x24 inch Aurelia Commander and three 36x48 inch Harris 87L.

The six web offset presses are used on an average of 11 hours a week. This does not include preparatory time spent in making the press ready for operation. This is time spent on the publisher's own publication and contracted work which is regular. Other commercial work is done on the presses when it is available and of the
type that can be run on a web offset. The greatest press time reported by a publisher was 16 hours a week, the lowest six hours.

The four sheet-fed offset presses are used on an average of 12 hours a week. This does not include preparatory time spent in making the press ready for operation. This is time spent on the publisher's own publication and contracted work which is regular. Other commercial work is done on the presses when it is available. The greatest press time reported by a publisher was 28 hours, the lowest four hours.

Only one publisher reported that offset printing was cheaper than letterpress. However, all publishers reported that their decision to convert to offset would remain the same if they had the decision to make over. Seven publishers reported their pressmen had responsibilities other than operating the press. Three publishers stated their pressmen did nothing other than operate the press.

Six publishers are using a combination of cold type and hot metal composition. Two publishers are using all cold type, and two publishers are using all hot metal.

Both cold type and hot metal composition are used by two daily publishers. Cold type and photocomposition is used exclusively by a daily publisher, and hot metal is used exclusively by another. The machines used for typesetting by daily publishers are the Friden Justewriter, Varityper, Photo Typositor, Linotype, and Intertype.

Both cold type and hot metal composition are used by the two semi-weekly publishers. Both semi-weekly publishers are using cold
type for straight matter composition. One publisher did not specify what copy was set in hot metal. The other publisher uses hot metal for cutlines, editorials, classifieds, and commercial job work. Filmotype and Photo Typositor are used for display lines. The machines used for typesetting are the Friden Justowriter, Filmotype, Photo Typositor, and Linotype.

Both cold type and hot metal are used by two weekly publishers. Cold type is used exclusively by one weekly publisher, another uses hot metal exclusively. The weekly publisher using cold type did not specify what equipment was used to produce display copy. The machines used for typesetting by weekly publishers are the Friden Justowriter, IBM typewriter, and Linotype. The machines used for setting display copy on the weeklies were not indicated.

Typesetting methods for offset varies from plant to plant. Only two of 10 publishers used cold type exclusively. Two publishers are using hot metal exclusively. Six publishers are using a combination of cold type and hot metal. Cold type machines within the price range of small weekly and daily publishers do not appear to have the versatility of hot metal machines.

The change to offset appears to generate little or no reader reaction. If readers detected a difference it may have been unimportant to them. No publisher reported any subscriber or advertiser discontent with the offset process. However, all the publishers were not using cold type in their production, and the difference between the appearance of hot metal composition in offset and
letterpress is slight.

Eight publishers reported using the pasteup method for page makeup. Two publishers reported they were using the traditional makeup methods of letterpress. The eight publishers using pasteup method of makeup used either cold type or a combination of cold type and hot metal for composition.

Three publishers indicated their equipment had been completely depreciated. However, only two publishers had a depreciation reserve available when offset equipment was purchased. Six publishers indicated that the cost of an offset press would have been more than if they had purchased comparable letterpress equipment. One publisher reported a web flatbed would have been more expensive than a used sheet-fed offset press.

The majority of publishers had employees who had previous offset or photography experience before the newspaper converted to offset. Five newspapers had an offset press in their commercial printing department before the newspaper converted to offset.

It appears that trained personnel for offset is hard to find. Several of the publishers indicated obtaining qualified personnel was no problem, but they did the training after the worker was hired. Retraining of letterpress personnel was not difficult. But several publishers indicated they had difficulty in retraining older personnel.

Employee resistance to offset does not appear to be a serious problem. Four publishers reported 100 percent cooperation, one no
preference, and three some for and some against.

Improved picture reproduction influenced the majority of publishers to change to offset. Another influencing factor was the prospect of greater use of pictures at perhaps no greater cost than they formerly spent for engravings in letterpress.

The publishers made a thorough study of offset before converting. They said they had been aware that there would be problems in converting to offset, and the majority had not expected offset to be cheaper than letterpress. The publishers said that the best sources of information for them in their evaluations were visits with publishers printing by offset, correspondence with manufacturers, and salesmen. Nine publishers thought offset had made them more quality conscious.

The management found they had to pay about the same wages for offset as for letterpress. Two publishers reported they paid some employees more for offset than letterpress, others less. Five publishers are paying the same for offset as they did for letterpress. One publisher replaced two Linotype operators with part time women. Turnover in personnel appears to be very limited with offset.

It appears that about the same size work force will be required for offset as for letterpress. However, two publishers reported work force reductions of about 25 percent. Three publishers reported a larger work force for offset than for letterpress, but this resulted from expansion of their operation. Good planning possibly will reduce the work force by a small percentage but not
significantly. The publisher that had the most noticeable drop in employees after offset listed these employees as mechanical employees only. Work formerly done by mechanical employees may have been transferred to another area, thus accounting for the larger difference in employees between offset and letterpress.

Good offset printing is not cheaper than good letterpress printing. Web offset press production is probably more expensive than web, rotary letterpress production. Web offset production appears to be more expensive because of the added expense of two fountains for each printing cylinder, chemicals used in ink-water balance, and water roller cover replacement and cleaning. Offset press expense is also increased because of the slightly higher cost of offset stock and the possibility of higher stock spoilage.

The web offset press gives much faster press speeds to those small weekly and daily publishers that formerly printed on sheet-fed flatbed or web, flatbed letterpress equipment. The web offset press will normally require less make-ready time than a flatbed letterpress.

Unused press time can be sold to other publishers or commercial printing sought for idle press hours. If the publisher does not have enough work of his own and is unable to obtain contracts to do work for other publishers, the web offset press can be a financial burden. The ideal publisher appears to be a publisher using his press or plant as a central publishing plant for several publishers.
Offset picture reproduction is superior to pictures produced by engravings on poor letterpress equipment, especially flatbed letterpress. The difference may be caused from the better finished newsprint used in offset or from the finer (more dots per square inch) contact screen used in making the halftone. Because engravings are not needed, more pictures can be used in offset; additional pictures add to production cost in letterpress.

Offset provides the means for a publisher to use one or a combination of three methods of typesetting—cold type, hot metal, and photography. All three have their advantages and disadvantages. The selection of typesetting equipment for offset appears to be contingent on the condition of existing equipment, availability and retention of adequate personnel, capital available, quality demanded, and volume of typesetting required.

If existing linecasting machines are in good operating condition, the publisher should be reluctant to convert to cold type. This is especially true if the retention of qualified operators is no problem. By retaining his hot metal machines the publisher makes no drastic change in the format of his paper; yet he has all the advantages of offset with hot metal.

Capital investment can be reduced by use of cold type machines. If typesetting equipment must be replaced, this is an excellent time to convert to the cold type process. This equipment should be considered only if it will adequately fulfill the typesetting goals the publisher has in mind. Cold type produces the poorest quality work...
of the three methods, and it is the least versatile. However, for straight matter composition, the small weekly and daily publisher should find the cold type process adequate with little, if any, adverse reaction from advertisers and subscribers. Trained typists can be easily and quickly trained to set type on these machines.

The capital investment required for fast, accurate photocomposition is high; therefore, photocomposition may be unfeasible for the small weekly or daily publisher.

The freedom of layout, greater use of pictures and illustrations, and less time needed for pasteup of advertisements appear to offer the best sources of potential cost reduction and efficiency for the publisher using the offset process. Capital investment in equipment needed for pasteup is less than that needed for advertisement makeup for letterpress. The amount of equipment needed is less, and it is also less expensive. Page makeup by pasteup appears to be another area of possible cost reductions. Justification of column depth in cold type is more difficult than in hot metal, but this does not appear to be an insurmountable problem.

Greater production appears to be possible with offset in less space than that required for letterpress. However, if volume is increased tremendously, greater storage facilities may be needed for newsprint.

Publishers can expect some resistance from employees when they convert to offset. However, this problem should not be serious if the employees are kept informed of the plans, and employees know
what their status will be when the conversion is completed.

Personnel turnover on small weekly and daily papers using the offset process appears less than for letterpress. Pay for offset appears to be about the same as the pay workers received before the change in process.

The number of workers needed for offset appears to be about the same as for letterpress for an equal volume of work. The offset process appears to arouse new interest in some of the employees.

Most of the publishers appeared to have spent considerable time weighing the advantages and disadvantages before they changed to offset. However, it is doubtful that all the publishers are realizing their fullest potential from the offset process.

The publishers appeared to be well satisfied with offset production, and they considered the conversion to offset a step forward.

It seems evident that offset as a process is going to continue to grow. The offset process can give the small weekly and daily publisher the means to compete with the larger newspapers and television for advertisers and circulation. Competition with larger newspapers and television is possible because the offset process makes possible photonews coverage without prohibitive costs. However, photonews must be closely associated with strong news and editorial policy to be effective. Thus the publisher finds himself with a valuable competitive asset that he must fully exploit if he is to justify the change to offset printing.
LITERATURE CITED


Following is the questionnaire cover letter which was sent to the publishers of the 10 selected newspapers:

Dear Sir:

I am making a case study of selected newspapers that have converted to the offset printing process.

In the light of the pros and cons of converting to offset, it is obvious this is an area which needs the serious attention and consideration of newspaper publishers. I hope to gather information through this case study which might prove useful to others who are considering the change.

If you will consent to participate in this study, please indicate by using the stamped, self-addressed envelope. I shall then make arrangements with you for a personal visit. The visit will be made at your convenience and will take only a few minutes of your time.

Very sincerely,

Charles A. Ridgeway,
Graduate Student in
Printing Management
South Dakota State University

Enclosure
Example of reply form:

Dear Mr. Ridgeway:

I am interested and will cooperate with you on your study. You may proceed with setting up an appointment with me.

Sorry, I am not interested in the study.

Signed,
Survey questionnaire of 10 selected newspapers now printing

by the offset process:

1. Did employees encourage or try to resist change to offset?

2. Did the prospects of improved picture reproduction influence your decision to convert to offset?

3. Did you really know what you were getting into or did you just get on the "conversion to offset bandwagon"?

4. Is your offset press sheet fed or web fed?

5. Brand name and size of press?

6. Capacity or sheet size of press?

7. Does your press have a unit for color?

8. Do you use cold type composition, photocomposition, or hot metal composition?

9. Did you originally start with offset or did you convert to offset later?

10. Brand name of machine you are using for your composition?

11. Do you consider this to be the best machine available on the market at this time?

12. Has the retraining of your employees been very difficult?

13. Has the hiring of new employees with offset experience been difficult?

14. What is the frequency of your publication?

   - Weekly
   - Semi-weekly
   - Daily
   - Daily except Sunday
   - Other

15. What is the circulation of your publication?

16. What is the format of your publication?

   - Standard newspaper size
   - Tabloid
17. What was the condition of your letterpress equipment when you started considering the conversion to offset?

- Excellent
- Good
- Poor
- Completely worn out

18. Had your letterpress equipment been fully depreciated?

19. Was the depreciation taken on old equipment available in cash for the replacement of equipment when last equipment was purchased?

20. Was replacement cost for offset less than it would have been for comparable letterpress equipment?

21. What was the greatest source of information in your evaluations over whether to convert to offset?

- Salesmen
- Correspondence with manufacturers
- Consultation and visits with other publishers who had converted to offset
- Other sources

22. Did you or any of your key employees have any previous experience with offset or photography prior to the time of conversion to offset?

23. Has offset made you more quality conscious?

24. Are you paying your employees the same, more, or less than you were for letterpress?

25. If your plant does commercial printing, did it have an offset press before you converted your newspaper to offset?

26. If so, did this commercial printing experience in offset have a tremendous impact on your decision to convert the newspaper to offset?

27. Did you buy a new or used newspaper press, camera, and photographic equipment?

28. What has been the reaction of your advertisers and subscribers to the new process?

- Favorable
- Unfavorable
- No comment
29. Has your circulation experienced a **sizeable increase** since you started printing offset?

30. Has **advertising lineage** increased since the conversion to offset?

31. **Do you do any papers in your plant other than your own publication or publications?**

32. How many publications of your own do you publish?

33. Are you able to do any **commercial** printing on your offset newspaper press?

34. If you had this decision to **convert to offset** to do over, would your decision be the same?

35. Do your records or books **show that offset printing is less expensive** than it was for letterpress?

36. Did you convert to offset originally with the idea that offset was a **less expensive process** than letterpress?

37. Have you found this to be true?

38. Does your pressman or pressmen have other duties than operating the press?

39. Has it **been easier to keep trained, qualified employees** than it was for letterpress?

40. Have you had much turnover in personnel since converting to **offset**?

41. **How many employees did you have prior to changing to offset?**

42. How many employees do you now employ?

43. Approximately **how many hours a week is your newspaper press operated?**

Other comments: