UNIT 9 KINDS OF BINDING

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9.0 AIMS

The aim of this unit is to acquaint you with the binding options available and their suitability for various kinds of publications. The job of the production section of a publishing house is to produce the book expeditiously and economically. For this, it is very important for a production person to know what kind of binding will suit the book keeping in mind the time and money available for the job. After going through this unit, you, the learner, should be able to suggest which particular style of binding should be opted for a given book. The unit will endeavor to provide information about:

- The number of options available for the production section for binding a book.
- The type of binding and its suitability for a specific kind of publication.
- How economical would be a particular type of binding in terms of time and money.

Further you will be able to distinguish between one kind of binding with the other.

The unit will also tell you

- the advantages and disadvantages of each kind of binding, and
- the considerations to keep in mind while choosing your binding method so that you create a better product.

9.1 INTRODUCTION

A number of binding options are available these days. The decision to choose a particular type of binding will depend upon several factors. The most important among these is the economic factor: how much can a publisher afford to bind an edition of a title? Other factors include the subject, size, readership and expected
span of life of the book. It is, therefore, necessary for a production man to know various options available and their suitability to the kind of publication to be bound. The type of binding you choose will also depend on both the intended purpose of the document and your budget. The choice of binding not only affects the design and layout of your project—it affects the final printing costs as well.

9.2 KINDS OF BINDING

Among the various varieties in which a book can be bound the following are most commonly used:

1. Saddle stitch
2. Side stitch
3. Lump or flexible binding
4. Perfect binding or adhesive binding
5. Loose leaf or album binding
6. Mechanical binding
7. Case binding or edition binding
8. Reinforced library binding
9. Saddle wiry stitching

9.2.1 Saddle Stitch

Saddle stitched is a method of securing loose printed pages with staples down the middle of a folded sheaf of papers. This is an economical form of binding for publications between 32 and 64 pages (and sometimes more) depending upon the size and bulk of the paper. Most of the magazines, journals and pamphlets are bound this way. Saddle stitching is also one of the simplest binding techniques. It is also the most widely used. Folded signatures are placed over a “saddle” and then stapled along the spine. A signature is a folded section that contains text. The stitched booklet is then trimmed on three sides: top, outside and bottom.

The pages will be imposed (arrangement of pages in composing so that when folded should run consecutively) in such a way that first half of the top section contains the first pages and the last half of the section will contain the last pages. In other words the forme is locked up in such a manner that first pages are printed with the last pages. The machine on which binding is done looks like the saddle of a horse on which collated forms are put for stitching.

After the sections are gathered, the cover is placed on the top and stitching is done through the back and the trimming is done from the rest of these sides. Both power operated and hand operated machines are available. Saddle stitching is done either by wire staples or by continuous line of cotton stitches. The number of stitches will depend upon the size of the spine. This style of binding is excellent for:

- Annual Reports
- Catalogues
- Booklets
- Directories
- Brochures
- Directories
- Newsletters
- Directories
Advantages:

- Saddle wire stitching is a very cost effective method of stitching small sized publications.
- Pages in this type of binding open easily without arresting any folio margin in the binding.
- It provides a perfect page registration.

Disadvantages:

- It cannot be used for bigger or bulkier publications.
- If the size of publication is big stitches would not hold the pages for long. After some use, the pages will come off the stitches.
- The wire may rust during humid conditions and damage the pages.
- Since saddle wire stitched publications do not have spines, their storage and retrieval in libraries becomes a problem.
- Because of the peculiar locking up of pages, the decision about this kind of binding cannot be taken with regular imposing style.

9.2.2 Side Stitch

In side stitching or side stapling, sections and formes are kept one after the other in one continuous sequence. Thus section of pp. 1-16 will be followed by section with pp. 17-32 and so on. Fewer operations are involved in this kind of binding. The gathered sections are put under the side-stapling (stitching) machine. The number of staples will depend upon the length of the spine. The cover is either stapled along with the main publication or pasted on the spine after the sections have been stapled. Like saddle stitching, side stitching can also be done by thread instead of wire staples. The three sides are trimmed after the stapling has been completed.

This is a variation on saddle stitching. It is not a very popular method, but it is another means of joining pages of a printed piece together by stapling through the cover along the binding edge. It is generally used for short-run materials. Low cost and easy production makes this binding the most popular binding method. This kind of binding can be conveniently used for booklets, catalogues, brochures and newsletters etc.

Advantages

- Side stitching is a cheaper method of binding a publication.
- It can be used for publications bigger in size than those used for saddle stitching.
- The job can be at a fast speed.
- The provision of pasting cover after the side stapling keeps the spine neat and wire staples do not show from outside.

Disadvantages

- The disadvantage of this binding is that cover usually comes off because it is held with the text pages only at stapled points and not all along the spine if not pasted over it.
A portion of folio margin is always arrested because of the staples and book does not lie flat on the table unless held by hands.

It is unsuitable for a publication which is required to be kept open for reference for longer periods.

**Activity 1**

**What is saddle stitch binding?**

(Check your answer with the hint given at the end of the unit)

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### 9.2.3 Limp Binding or Flexible Binding

Limp binding is a term used to denote a kind of binding in which the binder’s boards are made of flexible material and the resulting covers are limp or remain flexible rather than rigid. It is also known as flexible binding. The term includes paperback bindings and limp covering material bindings of all types. ‘Art card’ or ‘pulp board’, which is lighter in weight than binder’s board, is used as cover material. Sometimes, plastic sheets are used as cover material to give an elegant and smooth finish to the binding.

Limp binding can be sewn or unsewn. Large number of school textbooks and other cheaper publication, which require frequent handling, are examples of sewn limp binding. Unsewn limp binding is used for publications which are known as mass-market paperbacks.

In limp binding, after the sheets are folded and gathered, sections are collated to check that gathered sections are in order. The book is sewn in sections with thread by hand or thread sewing machine. The cover is pasted on the spine. In limp binding, the spine of the book is kept flat. The sides are trimmed after attaching the cover.

**Advantages**

- This is a cost effective method of binding. Limp covers cut down the cost considerably.
- Costlier hard cover books can be made available at cheaper price by the use of limp cover binding.
- It also allows a book to lie flat on the table without needing to hold it by the hands.

**Disadvantages**

- Pulp card or art card being less strong and durable than the board, this binding does not last long.
- In unsewn limp binding adhesive plays an important role. Strength of binding will also depend upon the text paper.
Activity 2

Explain the term limp binding.

(Check your answer with the hint given at the end of the unit)

9.2.4 Perfect Binding (or Adhesive Binding)

Perfect binding is another name given to unsewn limp binding. In this process, after the sheets have been folded, gathered and collated, they are held tightly and a small portion of the spine is sliced off thereby turning the sections into individual pages. The trimmed spine is roughened or notched back to make them absorb the hot glue. One or two applications of adhesive are applied to the roughened spine and the adhesive layer is carried round a little way to the front and back of the book. This is done so that the cover when applied on the glued back is held firmly. This is the most common binding method, and used widely for paperback books. This type of binding gives the most professional appearance.

However since the spine is glued flat, many of these books crack or break along the spine when opened or if the right quality of adhesive is not used.

Perfect binding is often used, and gives a result similar to paperback books. Paperback or soft cover books are also normally bound by using perfect binding. They usually consist of various sections with a cover made from heavier paper, glued together at the spine with strong flexible glue. This is what allows the magazine or paperback book to be opened. Mass market paperbacks (pulp paperbacks) are small, cheaply made, and often fall apart after much handling. Trade paperbacks are more sturdily made, usually larger, and more expensive.

The adhesives used for this kind of binding are of two types PVA (poly vinyl alcohol) and hot melts. The process of perfect binding involves application of some kind of flexible glue or quick drying adhesive. It is, therefore, also called adhesive binding. The pages of the book are held together with the help of some glue or adhesive rather than sewn together. It is also known as threadless binding.

When binding is done by applying only one layer of adhesive to bind both the text pages and the cover it is called one sheet perfect binding. When glue is applied to the text spine to join text pages and again applied for the second time to attach the cover to the book it is called two-sheet perfect binding.

Perfect binding has arisen from the need to keep the cost of books low. It was not possible to produce cheaper books with hard cover binding. This led to the advent of paperback editions of books during the 1940s. Once they were introduced in the market, they were an instant success and now there are machines available where, at one end sheets are fed and on the other end, a perfectly bound book is delivered.

Automatic and semi automatic machines are available which bind books at a very high speed. Fully automatic machines are fitted with gadgets with gathering and trimming facilities. In these machines folded sections are filled in the hopper feeder.
of gathering unit at one end of the machine and three knife trimmers at the other and deliver stacks of finished books.

In a semi automatic machine the gathered and collated books are fed into open clamps of the machine and processed further at a high speed. The books are delivered with creased cover duly attached. They are then trimmed at the head tail and fore edge either on a cutting machines (guillotine) or a three-knife trimmer.

**Advantages**

- The process of perfect binding is not only cheap but also very fast. This is used for a wide variety of paperback fiction and non-fiction books where price and not durability is the main consideration.
- A ‘perfect’ binding book opens flat irrespective of the size.
- The book can either be produced by a paper cover or cased in.
- This binding is very flexible.
- It can be produced in an uninterrupted workflow.

**Disadvantages**

Perfect binding also has some inherent disadvantages and constraints. Since there is no thread used in sewing the pages, these are held together with adhesive only. Therefore, the paper and the glue assume greater importance in the success or failure of the binding.

The drawbacks of perfect binding are:

- The binding appears to be quite strong but before long the glue perishes and the pages fall apart.
- Unless tropicalised adhesive is used, the binding comes off in hot climates.
- The quality of the adhesive has a direct bearing on the strength of the binding.
- Every kind of paper is not suitable for perfect binding. Heavily coated art paper or super calendar paper is unsuitable to hold the adhesive in this process. Therefore, this binding is unsuitable for good quality smooth finished paper.
- Application of adhesive, accuracy of setting and absorbance of paper are critical factors. Any variation in these may result in unstable binding.

**Activity 3**

Describe the process of Perfect Binding in a couple of sentences.

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(Check your answer with the hint given at the end of the unit)
9.2.5 Loose-leaf Binding or Album Binding

In loose leaf binding, a publication consists of individual printed or illustrated sheets, which are held together mechanically thereby allowing individual leaves to be replaced at convenience.

In this kind of binding printed sheets are punched and covered in a jacket or other covering material by means of a tape or ribbon. This arrangement facilitates the removal of out of date material and insertion of up to date matter. Publications like law reports, catalogues and some times membership directories are bound by these methods. Album binding guards the spine to accommodate the thickness of the mounted pages/ photographs. These books usually are not usually thread sewn.

For loose-leaf binding there is no need to compose the material in the shape of a forme. The pages are, in any case, cut into individual leaves and punched at the back and tied together. Because it looks like an album, it is also known as album binding.

Activity 4

What kinds of publications are suitable for Album Binding?

(Enter your answer here)

(Check your answer with the hints given at the end of the unit)

9.2.6 Mechanical Binding

Mechanical binding has become very popular these days because of the ease and speed with which some publications can be bound. Various types of binding styles in this category are collectively known as mechanical binding.

In mechanical binding all individual pages of a publication are trimmed from all the four sides and a series of holes are punched near the spine at uniform intervals. A spiral spring shape wire is passed through these holes. This kind of binding allows the publication to open flat from any part of the book.

Another development in spiral wire binding is spico binding in which the holding and fastening device is made of plastic. A small strip of uniform width emerging out of a thin plastic backbone is inserted into punched holes of the publication all along the spine. Unlike mechanical binding, holes in spico binding are rectangular. Both wire spiral and plastic methods of binding are costlier as in comparison with other types like limp or flexible bindings.

Wire binding is very similar to Spiral binding. Holes round or square are punched near the spine and a wire is fitted around the spine then clenched closed. The wire can be coloured. Advantages of this kind are that the book opens up completely flat and can be folded back on it. It is economical to carry out in small quantities in the offices but not a very permanent type of binding. It is better and neater than comb binding but wires can sometimes become entangled and need to be forced open after some use.
**Thermal binding** is a generic name for a method of securing loose printed pages with a strip of tape or plastic strips fused with heat. Thermal binding allows documents to lie flat when opened. This kind of binding is neat and sturdy. It is also known as tape binding.

**Velobind** is a trade name for a system that requires series of small holes to be punched adjacent the spine and a plastic strip with teeth is passed through to lock into a similar strip on the rear. This is another kind of mechanical binding used to permanently rivet pages together using a plastic strip on the front and back of the document. Sheets for the document are punched with a line of holes near the bound edge. A series of pins attached to a plastic strip called a Comb feeds through the holes to the other side and then goes through another plastic strip called the receiving strip. The excess portion of the pins is cut off and the plastic heat-sealed to create a relatively flat bind method. Velo bind provides a more permanent bind than comb binding, but is primarily used for business and legal presentations and small publications.

In **Comb binding** many rectangular slots are cut near the spine by a special hole punch and a plastic comb is fed through to hold the pages. Comb binding uses a rectangular hole pattern punched near the bound edge. A curled plastic “comb” is fed through the slits to hold the sheets together. Comb binding allows a book to be disassembled and reassembled by hand without damage. Advantages are that the with this binding a book opens up nearly flat, is cheap to carry out in small quantities in the office or print shop. However, this is not a very permanent type of binding. Comb binding is an inexpensive but professional looking option. Drawback of this kind of binding is that plastic can spring open and allow pages to fall out. Plastic deteriorates with age and becomes brittle.

**Spiral binding** or coil binding is commonly used for atlases and other publications where it is necessary or desirable to be able to open the publication back on itself without breaking the spine. There are several types but basically it is made by punching holes along the entire length of the spine of the page and winding a wire helix (like a spring) through the holes to provide a fully flexible hinge at the spine. Spiral coil binding uses a number of different hole patterns for binding documents. The most common hole pattern used with this style is 4:1 pitch (4 holes per inch). However, spiral coil spines are also available for use with different hole patterns.

Comb, coil, and wire binding methods require additional finishing time. Pages must be punched with the proper pattern of holes before binding. Because only a few pages at a time can be punched and they must all line up correctly, it adds to the preparation time and any lack of concentration can spoil the whole order of pages.

**Advantages**

- Mechanical binding looks very neat and beautiful.
- Pages and sheets can be arranged and rearranged at one's convenience.
- The process is very fast as operations like stitching or gluing are not required.
- It is very useful for binding of manuals, instruction books and workbooks.

**Disadvantages**

- As there are no sections in mechanical binding and individual sheets are held together with the help of spiral or plastic comb, pages have the tendency to get detached after frequent handling.
Any rough handling can damage the spiral as holes are punched at very close to each other.

Because of the weight of spiral wire or plastic comb, the publication becomes unevenly balanced and is not conducive to longer life.

Wire spiral or plastic comb, being fluffier than the main publication, causes difficulty in storage and retrieval of the publication from the stack of books.

Books needing repeated references and frequent handling are not advised to be bound by this method.

Activity 5

Mention some of the advantages of Mechanical Binding.

(Check your answer with the hint given at the end of the unit)

9.2.7 Case Binding or Edition Binding

Case binding (or hard cover binding) also known as edition binding is done in an assembly line process manually or with the help of machines. The process of case binding is divided into two parts. One: folding gathering, collating and sewing the sheets and two: preparing the case with covering material like card board and attaching the case.

A hardcover or hardbound book has rigid covers and is stitched in the spine. Looking from the top of the spine, the book can be seen to consist of a number of signatures bound together. When the book is opened in the middle of a signature, the binding threads are visible.

In this process, the sections are sewn, cut backed, rounded; the spine is glued and lined up with first and second lining. A separate case is prepared with the help of board. The boards are cut according to the book size. The boards are covered using fabric or paper, rexine or leather. The covers of hard cover books are made of thick card board covered with cloth or with paper rexin which is textured like cloth. Earlier the covering was done with leather and was also called full-bound or simply leather bound. More details will be given in the Unit on Materials for Binding.

The inner side of the boards is covered by using paper covering in the shape of end papers, which hold the cover on one side and the book block on the other. The sewn portion of the sections called book block is pasted into the case with the help of tapes or lining.

Quick mass binding of all copies of an edition where one copy of the edition is undistinguishable from the other is also called publisher's binding or edition/case binding. As the cover of binding is made of hard boards it is also called hard cover binding. The various operations of case binding are discussed in Unit on Binding operations.
9.2.8 Reinforced Library Binding

When demand for mass book production had not arisen, binders put their skill into making strong durable bindings. Moreover books were owned by individuals and were not subject to frequent handling. Now days, the binding of books is done at much higher speed and at much lesser time. This leads to deterioration in the standards of binding and the life of a bound book.

With the development of the library movement in the world and expansion of education, books exchange hundred and thousands of hands and any weakness in bookbinding reduces the strength of binding requiring the book to be rebound. To meet this special challenge of frequent book use has given rise to another kind of binding known as Reinforced library binding. This is especially done for copies meant for library use. The purpose is to provide extra strength and durability to the book.

Reinforced library binding refers to the hardcover binding of serials and paperback books intended for the rigors of library use. Though many publishers have started to provide “library binding” editions, many libraries elect to purchase paperbacks and have them rebound as hardcover books, resulting in longer life for the material.

The term reinforce denotes to extra strength provided to the binding using Morocco (goat skin with fine grain) instead of calfskin to cover the spine. Sewing is normally done on tapes and inserted in the splits of two boards used as casing.

The provision of French joint - a gap between the boards and spine where the leather is impaired is done by leaving a small space between the back edge of the board and the groove made by backing. It provides a greater area of covering material and facilitates the opening and closing of the book without putting any strain on the spine.

French Joint

The size of the groove should be equal to the thickness of the boards used for case. A wider groove will weaken the binding and a narrower one hinders the free opening of the book. Reinforced Library binding helps a bound book keeps its shape and strength for a longer period.

Activity 6

What is Reinforced Library binding?

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(Check your answer with the hint given at the end of the unit)
9.3 SUMMING UP

In this unit we have discussed the number of binding options available for the publisher. The decision to choose an option will depend upon several factors like cost of binding, subject of the book, readership and expected life span of the book.

- Various kinds of binding have been explained along with their advantages and disadvantages.
- The most commonly used binding styles and their utilities have been briefly explained.
- Saddle stitch and side stitch are economical forms of binding booklets between 32 and 64 pages and suitable for the magazines, journals and pamphlets etc.
- Limp binding or Flexible binding is a term used to denote a kind of binding in which binder's boards are made of flexible material and resulting covers limp or remain flexible rather than rigid.
- Perfect binding is another name given to unsewn limp binding. This is most commonly used for paperback books. This is also called thread less binding as section of the book are not sewn
- Loose-leaf binding or Album binding consists of individual printed or illustrated sheets, which are held together mechanically. This arrangement facilitates the removal of out of date material and insertion of up to date matter.
- Mechanical binding has become very popular these days because of the ease and speed with which some publications can be bound. Various types of binding styles in this category like spico, wiro, spiral, comb thermal etc. are collectively known as mechanical binding.
- Hard cover or case binding also known as edition binding is done in an assembly line process manually or with the help of machines. A hardcover or hardbound book has rigid covers and is stitched in the spine.
- Reinforced library binding is especially done for copies meant for library use. The purpose is to provide extra strength and durability to the book.

9.4 AIDS TO ANSWERS

Activity 1

Folded signatures are placed over a "saddle" and then stapled along the spine. The stitched booklet is then trimmed on three sides: top, outside and bottom.

Activity 2

Limp binding is a term used to denote a kind of binding in which binder's boards are made of flexible material and resulting covers limp or remain flexible rather than rigid.

Activity 3

Perfect binding is a process in which signatures are trimmed into loose sheets, which are then glued together by applying some kind of fast drying adhesive to the spine of the book.
Activity 4

Publications like law reports, catalogues and some times membership directories are bound by this method.

Activity 5

1) Mechanical binding looks very neat and beautiful.

2) Pages and sheets can be arranged and rearranged at one's convenience.

3) The process is very fast as operations like stitching or gluing are not required.

Activity 6

The term reinforce denotes to extra strength provided to the binding using Morocco (Goat skin with fine grain) instead of calf skin to cover the spine. Sewing is normally done on tapes and inserted in the splits of two boards used as casing.