A MANUAL ON THE PRINCIPLES OF CENTERING AND TABULATION IN TYPEWRITING

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PROJECT

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CHAPTER I

THE PROBLEM

Statement of the problem. The purpose of this project is to develop a manual which can be used in teaching the commonly-accepted principles of centering and tabulation in typewriting. The manual will be a detailed and illustrated presentation of the principles included in the entire area of balanced placement of typed materials.

Need and importance of the project. For many years in the teaching of typewriting the emphasis has been placed on the development of keyboard mastery in terms of speed and accuracy skill in the typing of straight-copy material. The implied theory of this trend is that once the student has mastered the keyboard and can type a satisfactory number of words accurately per minute, he can and will, without much further development, be able to apply this skill with judgment and precision to any typewriting problem.

Fuller has found that even when the material requiring judgment and precision in placement is reached in the textbook, many teachers are still more concerned with teaching speed and accuracy skill rather than in teaching the application of those

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skills. Yet virtually all typewriting problems, other than those involving straight typing of elementary copy, require the use of judgment and precision in the arrangement of the typewritten page.

During twelve years of experience as a teacher of typewriting, the present writer has observed that students who have attained a high degree of skill in speed and accuracy in the mastery of the keyboard do not necessarily apply these skills in a commensurate manner when they are confronted with typing problems requiring the use of judgment or precision.

Furthermore, when Rahe observed the typing results of more than one thousand WAVE advanced typing students at the United States Naval Training School at Indiana University, he had this to say among other factors in regard to their deficiencies: "Students with previous training lacked a sense of balance and the ability to make a good-looking typed page." He emphasized that in addition to speed and accuracy one of the other objectives for effective typewriting must be the application of judgment and precision to the placement of typed materials. Consequently, he strongly recommended that a better appreciation of the principles of balance be included

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in typewriting courses.

When the student has mastered the keyboard, he is indeed able to develop a sense of balance in the placement of typed materials only after he has a comprehensive understanding of the basic principles of centering and tabulation together with adequate experience in the meaningful application of those principles. Thus, the manual is intended to serve as a textbook supplement for those students who have developed keyboard mastery but who also need a more comprehensive presentation of the principles of centering and tabulation than is found in the standard typing textbooks.

In addition to meeting the needs of those students who may be considered "advance" students in that they have developed keyboard mastery, this manual is designed also to provide the general, non-vocational typing students with an amplified view of an area of typewriting which they may otherwise never explore to its fullest. Some of these students find standard typewriting textbook presentations difficult to comprehend. Many of these students are weak in language development and English achievement. They need material that is simplified and diagrammed.

In recent years in California more and more of these general, non-vocational students are enrolling in typewriting classes. Typewriting has become a general subject rather than a specialized course reserved for only those students who show
aptitude and interest in skill development and who have a corresponding goal toward vocational achievement. For example, about one out of every five high-school students in California is enrolled in typewriting. Consequently, as in any cross-section of unsegregated general students, there appears in typewriting classes a group of students who find it difficult to comprehend without further amplification the basic principles of typewriting as outlined in the textbook. This manual is also intended to amplify the textbook presentations of centering and tabulation for them.

A general review of the literature on the subject of teacher use of textbook presentations indicates that business-education textbook authors themselves urge teachers to enrich their text material in any way the teacher believes feasible in order to meet the individual needs of his classes. The manual is intended to be a step in this direction.

Limitations. The project is limited in its scope to the area in typewriting involving balance in the placement of typed materials. Since matters of balance in typewriting evolve from the centering principle, the project is, therefore,


4 Ibid., p. 3.
limited to the presentation of the centering principle which also includes tabulation, a more complex form of centering.

Delimitations. The manual is intended to serve as a supplemental teaching device for teachers of typewriting and as a source of reference for students who have mastered the typewriter keyboard. It is designed to be used with any standard typewriting textbook or to be used independently from a textbook.
CHAPTER II

REVIEW OF THE LITERATURE

Much of the current literature concerning typewriting is concerned with the lack of judgment displayed by typing students in the area of balance in the placement of typed materials. Business educators who express themselves on the subject firmly agree that an entirely new approach must be considered in teaching the application of typewriting skill to problems requiring judgment in placement. They seem to feel that a better understanding of the principles of balance in typewriting is needed.

Leslie and Pepe\(^1\) frankly say that "present-day typing results aren't good enough." They point out that many teachers of typing still feel it necessary to make a decision as to whether to teach keyboard mastery or to teach the application of that skill to practical typewriting problems. Leslie and Pepe claim it is easy and indeed advisable to attain both goals. They believe the answer is in simplifying textbook materials and teaching procedures. They conclude that "the entire problem needs reconsideration and a new approach."

After Rahe\textsuperscript{2} observed more than one thousand advanced typing students, he noted among other deficiencies that "Students with previous training lack a sense of balance and the ability to make a good-looking typed page. In addition to speed and legibility, one of the other justifications for typing is the neat appearance of the page." He believes that increased attention must be given to this area in typewriting in order to bring about a better appreciation of the principles of balance.

Smith\textsuperscript{3} likewise finds that there is indeed a lack of emphasis in the area of arrangement and placement particularly of tabulated materials. He points out that a "competent typist needs a basic understanding of what his tabulations are to accomplish and considerable practice, at reasonably frequent intervals, in the intelligent creation of useful tables." He believes the standard textbook presentations of tabulated materials are very poor and create misunderstanding in the student's mind.

Althols and Althols\textsuperscript{4} remind the teacher that "the

\begin{itemize}
\item[2] Rahe, \textit{loc. cit.}
\end{itemize}
development of judgment and thinking power has a definite place in the objectives to be attained" in typewriting. They emphasise that the area in which judgment is involved calls for intelligent understanding and that pupils should not merely be taught to follow rules but they should be taught the significance of those rules in practical situations.

Lamb\(^5\) observes that a great many typewriting teachers fail "to give their students the simple but absolutely essential understanding of rules for placement of material." She points out that students' typing difficulties disappear when they are taught to set up material according to a plan they can understand.

Rodrigues\(^6\) finds in her teaching of the non-vocational typing students that "material which the pupils do not understand has little interest for them." In the teaching of typing to slow learners (which she defines as those students whose I. Q. is 85 or lower and whose reading grade is below par) she must use many devices to supplement text material. She realizes that "if they are compelled to type material beyond their scope, they eventually lose interest. These pupils have a


definite interest in the subject when they enter the class, and it is the duty of the teacher to nurture this interest by providing material with which they are able to cope. The course can then be a source of great satisfaction to the pupil and usually he will make good progress." She insists that "work should always be within the concept of the pupil." She concludes that "in teaching slow learners to type, whether they are in an ordinary class or in a special class, we must proceed from the simple to the complex."

Young\(^7\) is also concerned with the slow learner in typing classes. He believes that if a slow learner (which he defines broadly as one who simply learns at a rate slower than average or superior students) shows evidence that he is at least potentially capable of developing employable skill in a business education subject, it is indeed important that special subject matter be used to meet his needs. He notes that "our school population is rapidly increasing which increases the probability that a great number of our students will be slow learners." He realizes that the classroom teacher is thereby confronted with the challenge of organizing subject matter as well as other matters to fit the needs of a heterogeneous group. Moreover, he makes it clear that it is the slow learner

who needs the most attention when it comes to simplified materials. Hence, he advised teachers to devise and improve their methods of coping with slow learners as effectively as they can until psychologists, through research and experimentation, can produce more concrete advice on methods of teaching slow learners.

Rowe\(^8\) points out that, in remedial instruction in typing, individual differences must also be "taken into consideration when the teacher decides upon a method of instruction. If a method is to be effective and generally satisfying, it must provide the best instruction possible to both dull and bright students." He suggests the use of the minimum-maximum type of lesson plan for heterogeneous classes in typewriting in which the unit presented is set up on three levels to accommodate the slow typist, the average typist, and the superior typists. All students receive the same initial instruction. The average typists receive a little more of the practical vocational-type of material on the unit than the slow learners, and the superior typists receive an assignment of enrichment material on the unit. Consequently, Rowe believes the teacher should devise much supplemental material to the standard text approach.

Lessenberry\textsuperscript{9} says "the resourceful teacher need not restrict the use of textbook materials to the one form in which it is printed. The rearrangement of materials will frequently enable a teacher to make better provision for the individual needs of students; providing for individualized teaching is an essential part of the effective planning for teaching typewriting."

Therefore, a general review of the literature indicates a dissatisfaction exists among business educators concerning the typing results that are based solely on the use of the traditional textbook materials. Some educators believe the textbooks must be re-organized and simplified particularly in the area of judgment placement; others claim the textbook presentations and the teachers do not fully emphasize the principles of balance of typed materials; still others observe that traditional textbook lessons explaining centering and tabulation, as well as other areas, must be supplemented in order to have them appeal to the non-vocational typists.

The majority of comments are aimed without doubt at the entire area of balance in the placement of typed materials. Consequently, a more effective procedure of teaching the principles involved in this area deserves consideration.

CHAPTER III

DEVELOPMENT OF THE MANUAL

Even though every standard typewriting textbook contains various explanations and examples of the principles of centering and tabulation, there has not yet been published a separate, comprehensive, yet simplified, presentation of these principles. If a student wants to learn or review this area in typewriting, it is necessary for him to refer to a typewriting textbook and study all the lessons in sequence in order to obtain a complete understanding of the subject matter involved. The principles of centering and tabulation are integrated with other principles throughout the textbook.

It is indeed difficult for a teacher to place emphasis on an area in typewriting which is not developed in a completely consecutive pattern of thought. Moreover, the student is handicapped in forming an appreciation of balanced copy when the principles involving balance are scattered throughout the textbook. He is apt to fail to see the continuity of thought that is necessary in the development of the judgment area in typewriting. This method of presentation tends to de-emphasize rather than emphasize the need for judgment in the placement of typed materials.

Consequently, it seems logical that a manual which contains all the principles of centering and tabulation in
separate, comprehensive form, simplified by diagrams, would indeed prove to be a useful, if not a necessary, textbook supplement to those students and teachers who want to develop a better appreciation of the entire area of balance in typewriting.

The manual presented in this project is a complete development of the principles of centering and tabulation that have been commonly-accepted and placed in that category by business educators as indicated by a review of their work and writings over a period of years and by virtually all typewriting textbook authors as revealed by examination of their textbooks.

Teachers and authors seem to be in agreement basically as to the technical subject matter contained in centering and tabulation principles. Moreover, it is a basic assumption that the principles of centering and tabulation are in substance the principles that constitute the area of balance in the placement of typed materials.

Inasmuch as the manual is intended to be used as a textbook supplement, the procedure of development within the manual parallels, but without interruption, that reflected in standard typewriting textbooks. The simple-to-complex development procedure is most widely-used in the presentation of centering and tabulation principles.
Ordinarily, the principle of centering is introduced in the simplest terms in textbooks immediately following the lessons completing keyboard coverage. Thereafter, much variation exists as to the intensity of the further development of the area. Usually other principles of typewriting interrupt the continuity of the centering and tabulation area. Textbook authors tend to introduce the student to all the basic principles of typewriting as soon as the keyboard coverage has been attained. Then, the student progresses to more and more complex levels of all the principles. He cannot progress with continuity from the simple to the complex level in any one area.

However, a textbook is expected to serve a different purpose than a manual. A manual may justifiably contain a more comprehensive, uninterrupted coverage of one area in typewriting than a textbook may contain. To insure complete coverage of an area, it seems advisable for the teacher to use both textbook and manual.

The principles of centering and tabulation as they appear in the manual are the standardized principles that are found in virtually all typewriting textbooks. The manual presentation appears in much more detailed form. Where there is slight variation among textbook authors in the method of developing a specific procedure in centering or in tabulation, both methods are presented in the manual. The student and the
teacher thereby find the manual usable with any standard textbook.

While the manual is intended to supplement or enrich textbook presentations, it need not necessarily be used as an adjunct to a textbook. It is also designed to be used independently as a teaching device to meet individual students’ needs or as a source of reference for any typing student. It is complete within itself.

The manual may be presented to students at any time after the keyboard has been presented. Matters of detailed placement as contained in the manual tend to confuse students who have not achieved a minimum level of keyboard mastery.

The teacher may make the manual available to all typing students as a textbook supplement or he may reserve it for students who, he believes, will profit most from its use.

The teacher should be thoroughly familiar with the principles of centering and tabulation presented in the classroom textbook and the manual before he uses the manual as a supplement. Even though both the manual and textbook presentations are in simple-to-complex order, the textbook lessons do not necessarily proceed at the same rate of speed as do those in the manual. The teacher must, therefore, coordinate the manual with the text. Otherwise, the manual may be reserved for later use as a device in remedial teaching or as a comprehensive review of the textbook coverage. The remedial teaching
or the review may be confined to a specific area in the manual which corresponds to the area covered in the textbook.
CHAPTER IV

THE MANUAL

This chapter contains the "Manual on the Principles of Centering and Tabulation in Typewriting" in its entirety.

The Manual is organized as an independent part of this project so that it may be duplicated for classroom use. The pages of the Manual are numbered at the bottom independently from the project page numbers which appear at the top.

The Manual is presented in this order:

Title-page
Table of Contents
Introduction
Part I - Centering
Part II - Tabulation
Index

The principles of centering, as presented in Part I, are developed in the simple-to-complex order. Once the definition of centering itself is clearly established, the principle of balance involved in the horizontal placement of typed materials is developed. The student is shown by diagram exactly what constitutes horizontal centering and how it is best accomplished. The various line lengths indicated on page seven provide a ready reference when quick estimates are
necessary for balanced line and paragraph typing.

Vertical centering is presented separately as a principle of balance. The separate presentation of these two principles fixes their relationship and application more firmly in the student’s mind. Much attention is devoted to paper alignment in vertical centering in order to emphasize the effectiveness of proper alignment in the application of the centering rules.

After all the rules of centering are presented, a set of fourteen carefully selected problems are prescribed. The problems involve the application of the centering rules and are arranged in the simple-to-complex order. The problems are designed to allow the student to exercise a controlled amount of judgment in the placement of his work on a sheet of paper. Moreover, they also will provide an opportunity for him to develop a rudimentary understanding of the importance of balance in arrangement of typed material.

Part II contains a continuation of the centering principle into a more complex area of application commonly referred to as "tabulation" because it involves the centering of columns and tables.

Tabulation is developed through the detailed expansion of each of its logical steps: (1) the arrangement of the material; (2) the planning of the spacing; (3) the setting of the mechanism; and (4) the typing of the material. Example
problems accompany each step forming a continuity of thought so that the student may form a logical development of the whole procedure as well as each part.

In order that the student may secure a broad understanding of all the aspects of the centering-tabulation area of typewriting, a set of ten possible variations often used in placement of tabulated materials is presented after all the standard principles have been developed. Each variation is explained and illustrated.

The student is then provided with ten problems intended to give him an opportunity to apply judgment and precision in arrangement. The problems are arranged in ascending order of complexity and require a specific application and understanding of balance based on the principles set forth in the Manual.
MANUAL

on the

PRINCIPLES OF CENTERING AND TABULATION

IN TYPEWRITING

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Sacramento, California
July, 1953
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INTRODUCTION

This Manual has been written in the interest of promoting a better understanding and appreciation of the principles involving balance in the placement of typed materials.

It is to serve those students and teachers who wish to use it as a supplement to their standard typing texts or as a source of reference after keyboard mastery is attained.

The principles of centering and tabulation as set forth in this Manual are those that appear in all standard typing texts. These principles in textbooks are usually found incorporated with other principles scattered in day-by-day lessons throughout the books. The purpose of the Manual is to present all the widely-accepted principles of centering and tabulation in one comprehensive form to be used in the classroom as a teaching device or as a general source of reference.

The Manual has two parts. The first part is a development of the principles of centering typed material; the second part is an expansion of the centering principle into the more complex procedure of tabulation. While each part may be used independently, the typing student cannot become proficient in tabulation until he has fully comprehended the principles of centering.

Eleanor B. Brown
PART I

CENTERING

To "center" in typewriting means to type the copy in such a way as to have it appear balanced on the sheet of paper.

This copy is unbalanced or NOT CENTERED

This copy is balanced or CENTERED

Centering, then, is a matter of planning for equal side margins as well as for equal top and bottom margins.

HORIZONTAL CENTERING refers to the left and right margins.

VERTICAL CENTERING refers to the top and bottom margins.

(see illustrations at top of next page)
Before the typist can center his copy accurately, he must know with what special size or face of type his machine is equipped. The two most common sizes of type face are pica and elite.

This is a sample of pica type.
There are ten pica strokes to one inch.

This is a sample of elite type.
There are twelve elite strokes to one inch.

In order to determine quickly with what type face the typewriter is equipped, refer to the marginal scale or platen (cylinder) scale. If the scale is from 35 to 91 spaces long, the machine has pica type. If the scale contains a few more than 100 spaces, the machine has elite type. However, to determine the type face with certainty, the typist need only to insert a standard 8½ x 11 inch sheet of typing paper into the typewriter with the left edge of the paper at zero. The pica type machine will measure 85 horizontal spaces; the elite type machine will measure 102 horizontal spaces.

If the machine is equipped with pica type, all typewritten problems must follow the pica measurement requirements. If the machine is equipped with elite type, all typewritten problems must follow the elite measurement requirements.
Horizontal centering—when the typewritten copy is centered horizontally, the lines are balanced on either side of the center of the sheet of paper so that the left and right margins are equal.

There are 85 available pica spaces or 102 available elite spaces across an 8½ × 11 inch sheet of standard typing paper. The midway point or the point at which a crease would fall if the paper were folded in half lengthwise is called the CENTERING POINT OF THE PAPER. It is one half the width of the paper. The centering point on pica type machines is at 42 (drop fractions), and on elite type machines it is at 51 if the left edge of the paper is at zero.

The exact centering point on the paper may be determined in two ways. One method is as follows:

1. Crease the paper lengthwise before inserting it in the machine.

2. After the paper is inserted in the typewriter, move the carriage to 42 for pica type or to 51 for elite type.

3. If necessary, release the paper-release lever and move the paper so that the crease will fall exactly opposite the type-bar guide. Then, with the paper in this position, adjust the paper guide so that it will fit snugly against the left edge of the paper.
The other method of determining the centering point is as follows:

1. Place your carriage at zero on the cylinder or marginal scale.

2. Insert the paper so that the first stroke when typed would be on the first horizontal space on the left edge of the paper.

3. Adjust the paper guide so that it will fit snugly against the left edge of the paper. The paper-guide scale and the marginal scale are not always in precise agreement.

4. Move the carriage to the exact centering point which is 42 for pica type and 51 for elite type.

Hence, to center a line HORIZONTALLY means to place the same number of strokes to the left of the centering point as to the right of the centering point.

EXAMPLE:

\[ \text{PICA} \quad \text{CENTERING POINT} \quad \text{ELITE} \]

\[ \begin{array}{c}
0 & 15 \\
\vdots & \vdots \\
0 & 102 \\
\end{array} \]
In order to center a line horizontally, place the carriage at the centering point and backspace ONCE for every TWO strokes in the line. Count spaces between words as well as letter strokes and punctuation marks. Do not backspace for just one stroke that may be left over. The point at which the last backspace occurs is the point where the line is to be typed.

A short line may be centered by counting the total strokes (letters, spaces, and punctuation marks) in the line and subtracting ONE HALF the total strokes from 42 (pica) or 51 (elite). Drop fractions. The remainder is the point on the marginal scale at which the line is typed.

Line and paragraph centering—In the typing of straight-paragraph material or drill exercises, each line is not centered individually. It is necessary to establish a standard length of line so that the paragraph lines or the longest line in a drill exercise is balanced with equal margins.

When typing paragraphs, the typist determines how wide the margins should be and then sets the left margin stop as many strokes from the left edge of the paper as he sets the right margin stop from the right edge of the paper.
The left margin is always straight except for paragraph indentations. The right margin will not always be straight because all end-of-line words will not always end exactly at the point of the right margin. However, the right margin should be kept as straight as possible. Words may be hyphenated (at the proper syllable), if necessary, to avoid typing more than five spaces into the margin. Likewise, a line may be ended approximately five spaces before the right margin, if necessary, to avoid typing beyond the five-space marginal extension.

Therefore, a margin range of five spaces before the right margin stop or after the right margin stop is considered acceptable in order to accommodate end-of-line words that normally would not end exactly on the right margin. However, the typist need not stop at the end of each line to determine word placement. The bell on the typewriter acts as a signal to the typist. It indicates that approximately five more strokes are available before the right margin control stops the carriage. If necessary, the margin release key may be used to release the marginal stop so the typist may use the extra five spaces in the margin to complete a syllable.

When typing drill exercises, the typist sets the margins to accommodate the longest line in the drill. The left and right margins are equally balanced in relationship to the longest line. The left margin is kept straight in drill exercises, but only the longest line will extend to the right margin.

Paragraphs and drill exercises may be typed on various lengths of lines. The line lengths are referred to as 70-space lines, 65-space lines, 60-space lines, etc. They may also be referred to as 7-inch lines, 6½-inch lines, 6-inch lines, etc.

The length of line is established by placing one half the line spaces on the left of the centering point and one half the line spaces on the right of the centering point.

TO FIND THE LEFT MARGIN: subtract one-half the line length from the centering point of the paper.

TO FIND THE RIGHT MARGIN: add one-half the line length to the centering point of the paper.

(see example at top of next page)
EXAMPLE:

Suppose a 70-space line is required.

On a pica type machine the margins would be determined in this way:

Left edge of paper at zero
Center of paper at 42 (pica)
Required line length = 70 spaces
One half line length = 35 spaces

Thus, left margin = 42 - 35 or 7
Right margin = 42 + 35 or 77

On an elite type machine the margins are determined in the same way except 51 is used as the centering point.

These are examples of the various line lengths with equal margins showing the approximate point at which the bell should ring!

PICA

ELITE
In the horizontal centering of line lengths another method of finding margins may be used:

The number of spaces in the length of line can be subtracted from the total spaces available. On a sheet of 8½ x 11 inch standard typing paper there are 85 available horizontal pica spaces and 102 available horizontal elite spaces.

**EXAMPLE (pica):**

Suppose a 65-space line is required on a pica type machine.

Total available space = 85  
Line length required = 65  
Unused spaces (margins) = 20

\[ \frac{20}{2} = 10 \text{ (left margin)} \]  
\[ 85 - 10 = 75 \text{ (right margin)} \]

**Note:** If the unused spaces cannot be divided equally, drop the fraction.

**EXAMPLE (elite):**

Suppose a 70-space line is required on an elite type machine.

Total available spaces = 102  
Line length required = 70  
Unused spaces (margins) = 32

\[ \frac{32}{2} = 16 \text{ (left margin)} \]  
\[ 102 - 16 = 86 \text{ (right margin)} \]

**Note:** If the unused spaces cannot be divided equally, drop the fraction.
Remember, horizontal centering will not be accurate unless the left edge of the paper is opposite the type-bar guide when the carriage is at zero on the cylinder or marginal scale. The paper guide should be adjusted so the left edge of the paper will automatically be at zero when inserted. Then, there actually will be 85 available pica spaces or 102 available elite spaces on which to type.

**Title centering**—paragraphs or drill exercises often require a title or heading which is centered horizontally above the copy.

Titles or headings to paragraphs or drill exercises are usually typed in **ALL CAPITAL LETTERS** (referred to hereafter as **ALL CAPS**), centered horizontally, and followed by a triple space.

**EXAMPLE:**

![EXAMPLE Diagram](image-url)
Vertical centering—in order to have the typewritten copy properly centered vertically, the top and bottom margins must be equally balanced as indicated in the diagram on page 2.

Vertical centering is determined in this way:

1. Count the lines in the copy to be typed including the title line, if one is used, and the spaces between the typewritten lines. In double-spacing there is one line left unused; in triple-spacing there are two lines left unused.

2. Subtract this number from the number of lines available from the top to the bottom of the typewriter paper. On a standard sheet of typewriter paper, 8½ x 11 inches, there are

33 available lines on a half sheet
66 available lines on a whole sheet

3. The amount left represents the top and bottom margins. One half the amount is the top margin; one half the amount is the bottom margin. Drop fractions.

Note: The top-margin figure indicates the number of lines to be left unused. If the top margin is to be 10 lines, the first line of typing will be on line 11.

**Example:**

Suppose an announcement containing 22 lines and spaces is to be centered vertically on a whole sheet of paper, double-spaced.

Total lines available = 66
Typewritten lines and spaces between lines to be used = 22
Lines left unused = 44
Top margin = one half of 44 = 22
Bottom margin = one half of 44 = 22
First line of typing = Line 23
Paper alignment—accurate vertical placement can be determined only when the top edge of the paper is in perfect alignment with the alignment scale on the typewriter. When the top edge of the paper is exactly even with the top edge of the alignment scale, the paper is on Line 0. When the paper is one line space above the alignment scale, the paper is on Line 1. Line 1, then, is the first line on which the typist can type.

EXAMPLE:

![Alignment Diagram]

**Note:** In order to align the edge of the paper exactly with the alignment scale, release the variable linespacer so the paper may be easily rolled on the cylinder to the proper position.
The number of vertical line spaces available on a standard 8½ x 11 inch sheet of typing paper is usually 66 writing lines for both pica type machines and elite type machines.

However, the line spacing on some elite type machines may permit a few more than 66 writing lines. Also, the paper itself may not always be cut to exact measurement in which case the number of writing lines available may vary slightly.

So, to insure precise placement, the typist should count the line spaces on the paper from top to bottom before determining placement measurements. This may be done by inserting the paper in the machine and spacing the lines with the carriage-return lever.

Itemized lists—in the typing of lists of items, it is not always necessary to center each line horizontally in the list. Only the longest line may be centered and the left margin stop set accordingly. All other lines in the list may then start at the established left margin. Thus, the list of items actually forms a typewritten column which is centered horizontally as a unit. The longest line determines the width of the column. The vertical centering procedure is determined in the usual way. The title is centered horizontally as usual.

**EXAMPLE:**

Suppose a list of 16 items plus a title is to be centered on a whole sheet of paper on a pica type machine.

Centering point = 42 (pica)
Longest item in list = 24 strokes

Number of strokes in longest line to be typed on either side of centering point = 24 - 2 = 18

Left margin = 42 - 18 = 30

**Note:** The right margin stop need not be set as each item is a complete line within itself.
Problems in centering—these fourteen problems are based on the principles set forth on pages 1-12. The problems are arranged in the simple-to-complex order.

PROBLEM 1

On a half sheet of paper center horizontally each of the lines in the following announcement. Use double-spacing. Center the announcement vertically.

Sacramento Senior High School

presents its semi-annual

Commencement Program

in the

Memorial Auditorium

June 10, 1953

PROBLEM 2

On a half sheet of paper center horizontally each of the lines in the following invitation. Use double-spacing. Center the invitation vertically.

The Class of 1954
invites you to attend its
Junior Prom
Friday, January 9, 1953
at
Governor's Hall
9:00 to 12:00
Formal
PROBLEM 3

On a half sheet of paper center horizontally each of the following official titles. Use double-spacing. Center the title in ALL CAPS and underscore the words in the title. Center the problem vertically. Remember, a title is usually followed by a triple space.

STUDENT-BODY OFFICERS

President
Boys' Vice President
Girls' Vice President
Secretary
Head Yell Leader

PROBLEM 4

On a half sheet of paper center vertically the following list of school activities. Use single-spacing. Center the title in ALL CAPS and underscore the words in the title. Center each line horizontally.

SCHOOL ACTIVITIES

Sophomore Tea
Sophomore Rush
Student Variety Show
Big Game
Senior Play
Stagette
Senior Ball
Junior Prom
Sophomore Dance
Military Ball
After-School Dances
Award Assemblies
Sports Rallies
PROBLEM 5

On a half sheet of paper center horizontally and vertically the following list of schools in the Sacramento-San Joaquin Football Conference. Center and underscore the title. Center horizontally only the longest line in the list. Do not center each line horizontally. Set the left margin stop at the point where the longest line, when centered, begins. Start all the lines at this point in column form.

SACRAMENTO-SAN JOAQUIN FOOTBALL CONFERENCE

Christian Brothers High School
Grant Union High School
Lodi High School
C. K. McClatchy Senior High School
Modesto Senior High School
Sacramento Senior High School
Stockton Senior High School
Turlock High School
Woodland High School

PROBLEM 6

On a half sheet of paper center horizontally and vertically the following Sacramento High School songs. Use double-spacing. Center and underscore the title. Center only the longest line in the song and set the left margin stop accordingly. Start all lines at that point.

FIGHT, DRAGONS, FIGHT

Fight, Dragons, fight
For the purple and the white
Sturdy and true
Today means victory for you.
Our banner's unfurled,
For we're here to tell the world
We'll fight for Sacramento;
So fight, mighty Dragons, fight!
PROBLEM 7

On a half sheet of paper center horizontally and vertically each line in the following announcement. Use your own judgment in arranging the number of words to be typed on each line. Use as many lines as you think necessary. Double-space between the lines.

The annual football classic between Sacramento High School and McClatchy High School will be played on Thanksgiving Day, November 26, 1953, at Hughes Stadium, Sacramento, California. Kick-off at 1:00 p.m.

PROBLEM 8

On a 50-space line, centered horizontally, type the following two paragraphs. Use double-spacing on a whole sheet of paper. Indent each paragraph five spaces. Double-space just once between paragraphs as you do between lines. Leave approximately 15 lines unused for the top margin.

The Student Handbook is a valuable publication prepared for the students of the Sacramento Senior High School. It is a small booklet designed to acquaint them with the organization and services of their school. Each page of this book reflects the great traditions of the school which thousands of graduates have followed since its founding in 1866.

California had been a state only six years when the Sacramento High School was established. The school has grown steadily with the state. Each student should take pride in carrying forth the high standards of citizenship he has inherited as a student in this school. The Student Handbook provides the student with a specific list of these truly rich traditions and responsibilities which are his to maintain as a good citizen of Sacramento Senior High School.
Problem 9

On a 60-space line, centered horizontally, type the two paragraphs in Problem 4. Use single-spacing on a half sheet of paper. Indent each paragraph five spaces. Double-space once between paragraphs. Leave approximately 8 lines unused for the top margin.

Problem 10

Type the two paragraphs in Problem 4 on a 65-space line, centered horizontally. Use double-spacing on a whole sheet of paper. Leave approximately 17 lines unused for the top margin. (In the case of a 65-space line where an even division of spaces cannot be placed on either side of the center of the paper, the extra space is placed on the right side of the centering point.)

Problem 11

Type the following paragraphs on a 65-space line (pica) or on a 70-space line (elite). Use single-spacing on a half sheet of paper. Center the title horizontally in ALL CAPS. Triple-space after the title. Use your judgment in the vertical centering placement.

The State of California

Did you know that the State of California is first in the country in motor vehicle registration, is second to New York in population, and second to Texas in size?

Found within its borders is almost every combination of climate, soil, minerals, plant, and animal life which exists in the United States. Within California are the lowest and the highest points in the continental United States. The lowest point is in Death Valley and the highest point is on Mount Whitney. These two points are only sixty miles apart.

California is truly a spectacular state as its many visitors readily proclaim and its ten and one-half million inhabitants proudly enjoy.
PROBLEM 12

On a whole sheet of paper center horizontally and vertically the following list of school clubs as a unit in one column. Use single-spacing. Center and underscore the title over the list: SACRAMENTO SENIOR HIGH SCHOOL CLUBS. Center only the longest line in the list and set the left margin stop accordingly. Start all lines at that point.

Beaux Arts  
Boosters  
California Scholarship Federation  
Camera Club  
Chemistry Honor Club  
Chinese Club  
Forum Honor Club  
French Honor Club  
Future Homemakers  
German Club  
Hi-Y Club  
International Club  
Key Club  

Mathematics Honor Society  
Nana Moma Club  
Nisei Club  
Officers' Club  
Pan American Club  
Pepperettes  
Peppers  
Pnyx Club  
Saber and Rifle Club  
Sigma Mu  
Spanish Club  
Taediferi  
Tri-Hi-Y Club

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PROBLEM 13

On a whole sheet of paper center horizontally and vertically the following list of books and authors as a unit in one column. Use double-spacing. Entitle the list: READING LIST. Center only the longest line in the list and set the left margin stop accordingly. Start all lines at that point. Titles of books may be underscored, typed in ALL CAPS, or placed in quotation marks. Use any method you choose.

The Bright Sun by Mary Hawthorne  
Damaged Leaf by Henry Butler  
Courtesy Road by Beckley Morrison  
Country College by James William Graham  
Tablespoon Mountain by Kennedy Knowles  
A Day in Rome by Anthony Ricardo  
Nowhere the Night by Helen Frances Whittier  
The Horse Latitudes by Sir William Campbell  
The Blakes of Block Island by Charles R. Newell  
Crocodile River by Esther Clinton  
Embellished Robe by Sidney Carter Livingston  
Hotel Picturesque by Anne Pierce
PROBLEM 14

Type the following two paragraphs double-spaced on a 60-space line (pica) or on a 65-space line (elite). Center the line-length horizontally. Use your judgment in arranging the problem vertically on the sheet of paper. Your copy will not contain the same words per line as does this copy. Remember, you have a range of approximately five spaces before and after the right margin stop in which to end each line. Listen for the bell on your machine. It will remind you that you are approaching the right margin and have about five spaces to go to the margin stop. If you need to type into the five spaces allowed beyond the margin stop, depress the margin-release key and then proceed. The paragraphs are entitled: SACRAMENTO.

The City of Sacramento is located on the Sacramento River at the site where Captain John A. Sutter in 1839 built an adobe house which became widely known as Sutter's Fort. In 1849 the citizens of this new town celebrated the Fourth of July in a grove of oaks where the Capitol now stands. By 1850 the gold rush was at its height, and in 1854 Sacramento was made the capital of the State. Since then, it has grown to be the center of an immensely fertile agricultural district.

Today Sutter's Fort has been restored and stands at 28th and L Streets in Sacramento. It houses a collection of relics of pioneer and gold rush days. But even more than that, it proudly reminds the citizens of this great city around it that here was the first outpost of civilisation in the interior of California.
PART II

TABULATION

To "tabulate" in typewriting means to type copy that would ordinarily be difficult to read in paragraph form in such a way as to have it appear in more readable table form with centered columns and headings.

Tabulation, then is a matter of

A. Arranging the copy material in column form with appropriate headings.

B. Planning the spacing of the columns and headings so that the typewritten copy will appear balanced on the sheet of paper.

C. Setting the tabulator mechanism to accommodate the planned spacing requirements.

D. Typing the headings and columns according to plan.
A. ARRANGING THE COPY MATERIAL

Copy material is said to be **tabulated** when it contains two or more columns of typewritten information. Typewritten copy arranged in just one column is not tabulated but centered either line by line or as a columnar unit. Hence, tabulation procedure is not used in typing one-column copy; it involves copy material arrangements in two or more columns.

The student of elementary typewriting will usually find his textbook tabulation copy material pre-arranged or semi-arranged for him. Thus, the textbook author, in arranging the copy material, prepares the first step in the tabulation procedure for the beginning student. Only after the student has mastered the principles of tabulation can he effectively arrange his own copy. If the copy material is not pre-arranged by columns, it is the duty of the typist to arrange his data in a more readable form if necessary.

All copy material does not lend itself readily to columnar classification. The typist must first determine in what form the copy may be most easily read. If the copy can best be read in tabulated form, the typist, when arranging his material prior to typing it, is guided by this procedure:

1. **Determine the content of the main heading, subtitle (secondary heading), and column headings.** Combine column headings wherever feasible.

   **Note:** Tabulated data do not necessarily require subtitles (secondary headings) or column headings. Either or both of these headings may be omitted. When included, they may contain one line, two-lines, or several lines. However, it should be remembered that copy is arranged for tabulation in order to facilitate the reading and understanding of it. Long and complicated headings defeat this purpose.

2. **Classify data under column headings.** Evaluate the material in relationship to column headings. Combine or separate the material wherever practicable. Eliminate unnecessary words or phrases.

3. **Plan the final arrangement of the data so that it can be typed with practicability on the size paper provided.** The purpose of tabulating information is sometimes defeated when the tabulation is so arranged that maximum usage is not made of the sheet of paper.
B. PLANNING THE SPACING OF THE COLUMNS AND HEADINGS

The spacing of the columns with their headings can best be determined by

1. Drawing a rough-outline sketch of the tentative placement of the data.

2. Planning the exact vertical-centering placement measurements.

3. Planning the exact horizontal-centering placement measurements for columns and margins.

4. Determining the exact horizontal point at which all columns and headings begin on the marginal scale.

5. Recording all placement measurements on the rough-outline sketch.

Drawing a rough-outline sketch of the tentative placement of the data—the sketch drawing provides the typist with a diagram of the anticipated arrangement of the data and the form to be followed.

EXAMPLE:
Planning the exact vertical-centering placement measurements—vertical placement measurements are determined by following this procedure:

(a) Count all lines including the heading and spaces between lines to be used in the problem.

Note: This spacing is ordinarily used after headings:

- Main heading or title—triple space (two lines left unused)
- Secondary heading or sub-title—double spacing (one line left unused)
- Column headings—double space (one line left unused)

(b) Subtract the number of lines and spaces to be used from the number of vertical lines available on the entire sheet of paper.

On a standard sheet of 8½ x 11 inch paper there are 66 vertical lines available. Vertical line spacing is usually the same on pica and elite machines. Slight variations may exist between machines and between different reams of paper. If precise measurements are required, the paper should be inserted in the machine and the line spacing counted.

(c) Divide the remainder by two. Drop fractions. The result represents the number of vertical line spaces to be left unused for the top margin; the same amount is left unused for the bottom margin. In order to have the correct number of lines remain unused in the top margin, it is necessary to space down one additional line before starting to type.

(d) Place the vertical measurements on the diagram.

(see illustration on next page)
EXAMPLE:

Suppose in this two-column tabulation problem there are 52 lines to be used.

<table>
<thead>
<tr>
<th>Available lines</th>
<th>66</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lines to be used</td>
<td>52</td>
</tr>
<tr>
<td>Lines to be left unused</td>
<td>14</td>
</tr>
</tbody>
</table>

$14 \div 2 = 7$ for top margin

7 for bottom margin

First line of typing = Line 8

Planning the exact horizontal-centering placement measurements for columns and margins—horizontal placement measurements for columns and margins are determined by following this procedure:

When the spacing between columns is equal to the spacing in margins:

(a) Count the number of spaces in the longest line in each column. This may be done easily by spelling out each stroke on the space bar.

Note: It is always the longest line in the column that determines the number of spaces to be provided for that column.

(b) Add the total of the longest-line strokes in all the columns.

(c) Subtract this total from the number of spaces available across the sheet of paper.

On a standard sheet of 8½ x 11 inch paper there are 85 available pica spaces and 102 available elite spaces.

(d) Divide the remainder by the number of "space" columns.
Note: "Space" columns include the left and right margins and the space between the columns. Thus, in a two-column tabulation, there are three "space" columns.

The result represents the width of each space column. If the division does not provide equal spacing, the spacing may be balanced by placing the larger number, for example, in the center and the two smaller numbers in the margins.

(e) From the left edge of the paper to the right edge of the paper, add all the horizontal spaces provided for each margin, column, and spacing between columns. This total should equal the total number of available spaces across the sheet of paper.

This important procedure serves as a final check on the accuracy of the measurements before the actual typing of the problem is undertaken.

(f) Place the horizontal measurements on the diagram.

**EXAMPLE:**

Suppose in this two-column tabulation problem, diagrammed below, there are 15 pica strokes in the longest line of the first column and 20 pica strokes in the longest line of the second column.

Note: 15 pica strokes equal 18 elite strokes. 20 pica strokes equal 24 elite strokes. Thus, the column measurements in elite strokes are 18 and 24.
Total strokes in both columns:
16 + 20 = 35 pica
18 + 24 = 42 elite

Total available spaces on the paper:
85 pica
102 elite

Total unused spaces:
85 - 35 = 50 pica
102 - 42 = 60 elite

Total "space" columns:
3 (left and right margins and between columns)

Width of "space" columns:
50 ÷ 3 = 16 plus 2—or 16 plus 17, plus 17—pica
The tabulation would be in precise horizontal balance if 16 unused spaces were placed in the center "space" column and 17 unused spaces in the left and right margins.
60 ÷ 3 = 20 elite
The tabulation would be in precise horizontal balance if 20 unused spaces were placed in the center "space" column and the left and right margins.

**EXAMPLE:**

![Diagram showing space allocation](image)

**Proof:**
17 + 15 + 16 + 20 + 17 = 85
20 + 18 + 20 + 24 + 20 = 102
When the spacing between columns is not equal to the spacing in margins:

(a) Count the number of spaces in the longest line in each column. This may be done easily by spelling out each stroke on the space bar.

Note: It is always the longest line in the column that determines the number of spaces that must be provided for that column.

(b) Assign a reasonable number of spaces that may be left unused between the longest line in the first column and the beginning of the second column. If more than two columns of tabulation are planned, assign a number of spaces that may be left unused between all columns. It is not necessary to leave an equal number of unused spaces between each column.

(c) Add the number of spaces in the longest line of each column to the number of spaces to be left unused between columns.

(d) Subtract this total from the total number of spaces available across the sheet of paper. The result represents the total space-width of the tabulation problem.

On a standard sheet of 8½ x 11 inch paper there are 85 available pica spaces and 102 available elite spaces.

(e) Divide the remainder by two. Drop fractions. The result represents the width of the left and right margins.

(f) From the left edge of the paper to the right edge of the paper, add all the horizontal spaces provided for each margin, column, and spacing between columns. This total should equal the total amount of available spaces across the sheet of paper.

This important procedure serves as a final check on the accuracy of the measurements before the actual typing of the problem is undertaken.

(see illustration on next page)
EXAMPLE:

Suppose in this two-column tabulation problem, diagrammed below, there are 15 pica strokes in the longest line of the first column and 20 pica strokes in the longest line of the second column.

Note: 15 pica strokes equal 18 elite strokes.
20 pica strokes equal 24 elite strokes.
Thus, the column measurements in elite strokes are 18 and 24.

Total strokes in both columns:
15 + 20 = 35 pica
18 + 24 = 42 elite

Assignment of spaces between columns:
20 pica
24 elite

(continued on next page)
Total space-width of problem:
$35 + 20 \cdot 2 = 55$ pica
$42 + 24 = 66$ elite

Total available spaces on the paper:
85 pica
102 elite

Total spaces remaining for margins:
$85 - 55 = 30$ pica
$102 - 66 = 36$ elite

Width of left and right margins:
$30 \div 2 = 15$ pica
$36 \div 2 = 18$ elite

**EXAMPLE:**

![Diagram showing spaces and margins]

**Proof:**
$15 + 15 + 20 + 20 + 15 = 85$

**Proof:**
$18 + 18 + 24 + 24 + 18 = 102$
Determining the exact horizontal point at which all columns and headings begin on the marginal scale—after the widths of the columns and margins have been recorded on the diagram, the exact starting point on the marginal scale is determined for each column and heading. The starting point for each is placed on the diagram.

The exact starting points for each are determined in this way:

**Columns** -- First column—the first column begins at the left margin.

Second column—the second column begins at the point represented by the total of all the strokes to the left of it; spaces in the left margin; spaces in the longest line of the first column; spaces between the first and second columns.

Additional columns—additional columns begin at the point represented by the total of all the strokes to the left of it.

**EXAMPLE:**

- First column:
  - Pick 15
  - Proof: $15 + 15 + 20 = 50$

- Second column:
  - Elite 18
  - Proof: $18 + 18 + 24 + 24 = 60$

**Note:** In the tabulation of itemized lists it is not necessary to set the right margin stop. Since the length of each line is pre-arranged, the right margin stop may be placed at the far end of the marginal scale. Do not record the point of the right margin on the diagram.
The exact starting points for headings are determined in this way:

**Headings** -- Main title—a main title is centered over tabulated material by the same method as any line is centered horizontally. (Refer to page five.)

Secondary heading—a secondary heading or sub-title is centered under the main title by the same method as any line is centered horizontally. (Refer to page five.)

Column headings—column headings are centered over their columns. The headings may be shorter or longer than the width of their columns. The column heading is balanced equally on either side of the center stroke in the column. The exact starting point is determined by backspacing from the center stroke of the column once for each two strokes in the heading.

**EXAMPLE:**

![Diagram of column headings and center stroke](image-url)
Recording all placement measurements on the rough-outline sketch—the diagram is complete when all vertical and horizontal measurements are indicated and when the starting points for all columns and headings are shown.

EXAMPLE:

![Diagram showing measurement and layout examples.](image)
C. SETTING THE TABULATOR MECHANISM

Once the rough-outline sketch is completed, the typewriter must be adjusted to correspond to the measurements as possible. Thus, the tabulator mechanism is set in accord with the measurements indicated on the diagram.

The exact procedure to be followed in setting the tabulator controls is presented in any standard typewriting textbook. The typist should refer to a chart which indicates all parts of the machine which he is using and become thoroughly familiar with the operation of the tabulator mechanism.

After the controls have been set and carefully checked for accuracy, the typist quickly reviews the general layout of the problem and begins to type it.

D. TYPING THE HEADINGS AND COLUMNS

After the typist has arranged the data, planned the measurements, and set the tabulator mechanism on the typewriter according to the measurements, he is ready to type the data.

It is advisable for beginning students in tabulation to type a "sample" copy first using the framework of the measurements set forth on the penciled rough-sketch outline. From the sample copy a final copy can then be typed.

Ordinarily, the copy material in tabulation problems is typed in this order:

1. Main heading or title
2. Secondary heading or sub-title
3. Column headings
4. Columns

All information that lends itself to tabulation and to classification in columnar form does not necessarily require all of these four headings. It is appropriate that all tabulated data be identified with a main heading or title, but secondary headings or sub-titles and columnar headings are used only when necessary for purposes of clarification.
Main heading or title—this is usually typed first because it is easily centered and seems to be the logical first step in the problem. Ordinarily, main headings or titles are short and serve merely to identify the data tabulated.

However, if the main heading or title is longer than approximately five inches or much longer than the width of the columns under it, it should be typed on two or more lines. In this case, each line is single-spaced and centered.

It is advisable to arrange the lengthy heading into the pyramid or inverted-pyramid pattern as shown here for example:

**Pyramid Style**

SOUTHERN PACIFIC RAILROAD
UNEMPLOYMENT INSURANCE CONTRIBUTIONS
FOR ADMINISTRATIVE EXPENSES FOR CURRENT YEAR

**Inverted-Pyramid Style**

COTTON, WOOL, SILK, AND RAYON PRODUCTION
IN THE UNITED STATES DURING AND SINCE WORLD WAR II

A lengthy heading may also be arranged in thought groups by placing single words or phrases on separate lines. This style of heading placement is easily read. For example, a lengthy heading like this:

GENERAL BUDGET ESTIMATES OF THE SACRAMENTO HIGH SCHOOL ATHLETIC ASSOCIATION FOR THE SCHOOL YEAR, 1952-1953

can be arranged in thought groups in this way:

GENERAL BUDGET ESTIMATES
OF THE
SACRAMENTO HIGH SCHOOL ATHLETIC ASSOCIATION
FOR THE SCHOOL YEAR, 1952-1953

The typist may choose any of the following methods to identify the main heading or title:

a. Use all capital letters (ALL CAPS)
b. Use lower case letters; capitalize main words
c. Underline all the letter strokes and spaces between letters
d. Underline the letter strokes, not spaces
e. Space once after each typewritten stroke
Abbreviations, in general, should never be used in the main heading or title except in cases where the abbreviated form is accepted more commonly than the unabbreviated form.

Main headings or titles are more easily read and are more attractive if followed by a **triple** space.

**Secondary heading or sub-title**—it is usually centered one triple space below the main heading or title. Because it subordinates the main heading or title, the secondary heading or sub-title does not usually require special identifying devices such as **ALL CAPS**, underscores, or spaces between strokes. Ordinarily, it is typed in lower case letters with main words capitalized. Two or more lines may be used if required for reasons of balance or attractiveness. In this case, each line is single-spaced and centered.

The secondary heading or sub-title is more easily identified with its function of subordination to the main heading or title if it is followed by a **double** space.

There are cases where it is sometimes desirable to direct more attention to the secondary heading than to the main heading. This is done by simply transferring the special identifying device used in the main heading to the secondary heading. For example, in this heading:

**The Sacramento Senior High School**

**DAILY CLASS ATTENDANCE REPORT**

the first line is the main heading, but the second line is the line to which more attention is to be directed. Consequently, the secondary heading receives the special identifying device—**ALL CAPS**.

**Column headings**—since the columns have not as yet been typed, the typist must rely completely on the diagram measurements for the starting point of the column headings.

Column headings are centered over their corresponding columns. Ordinarily, it is logical to place them one double space after the secondary heading and one double space above the columns. A wider spacing may be more desirable for special classifications. However, no less than one double space is advisable if the column heading is to retain its identity and function.
If a column heading is so much wider than its column that it extends into the space that is allotted to margins or other columns, the heading should be placed on two or more lines in order to maintain balance and to facilitate the reading and understanding of the tabulation. In this case, each line should be single-spaced and centered over the column. However, it is advisable to keep a column heading on one line so long as it does not extend into the space allotted margins or other columns.

If one column heading requires two or more lines when the other column headings in the tabulation require only one line, it is the column heading with the two or more lines that is used as a guide for determining the line spacing to be left unused before and after all the column headings. Thus, since a double space is ordinarily used before and after column headings, a double space would be allotted before and after the column heading with two or more lines thereby causing a wider spacing before the single-line column headings.

In relationship to each other, column heading lines are extended upward when more than one line is required. The one-line headings are then typed in line with the bottom line of the two- or three-line headings. Hence, a uniform line spacing is retained between column headings and columns.

The typist may choose any of these variations to identify the column headings:

a. Use all capital letters (ALL CAPS)
b. Use lower case letters; capitalize main words
c. Underline all the letter strokes and spaces between letters
d. Underline the letter strokes, not spaces

Some typists prefer to insert column headings after the columns have been typed so that the columns themselves provide a visual guide for placement of headings. However, this method is not recommended when carbon copies are being made. With a carbon pack, the typist must carefully keep the paper in precise alignment and free from carbon smears when rolling it back to type in the column headings.

Columns—the columns are typed horizontally, line for line. The tabulator bar or key is depressed for the allotted space between each column. In order to avoid irregular column margins, the typist must keep the tabulator bar or key completely depressed until the carriage has fully stopped at the column.
margin. Also, it is important that the typist use a consistently regular stroking method each time the tabulator bar or key is depressed. Irregular stroking of the tabulator bar or key causes variations to occur in the functioning of the mechanism.

Columns are not typed as vertical units. Inexperienced typists sometimes type the entire first column before typing the second column. This procedure is inadvisable for several reasons. The main reason is that it is time-consuming because of the need to manipulate the carriage-return lever more often. Also, even though the rough-outline diagram or sample typewritten copy indicates the exact starting point for each column, the paper may slip in the machine when it is rolled back to that point for each new column. The slightest change in alignment causes difficulty, if not inaccurate horizontal reading of the finished tabulation. Moreover, unless the information is typed horizontally, line for line, the typist cannot follow the logic in his copy and, consequently, loses a final opportunity to detect any errors that may have occurred in the copy.

Finally, if, when typing the column as a vertical unit, the typist omits a line of copy in the column, the remaining columns are thereby out of logical alignment. This situation is usually not detected until the entire problem is finished, and then it is impossible to correct the error. Horizontal typing of columns provides the typist a better opportunity to detect and correct these errors as they occur.
VARIATIONS IN PLACEMENT OF TABULATED MATERIAL

The typist may use many variations from standard procedure in the placement of tabulated material. The application of any of the tabulation procedures to specific problems of typewriting involves judgment and imagination on the part of the typist. The particular style used in placing typewritten material on a sheet of paper depends entirely on the nature, size, and/or content of the data to be arranged.

The typist, when choosing a style, should be guided primarily by the readability. The style chosen should be the one that permits the easiest reading and produces the clearest presentation of the typewritten material. A variation in placing the data can sometimes bring about this objective more easily.

These placement variations in style are the most commonly used and can be applied readily to many special types of classified material:

1. Blocking column headings with column margins
2. Placing short tables off-center
3. Using leaders in matching items
4. Tabulating data in letters
5. Using lines to mark separations of columns and headings
6. Using footnotes in tabulated material
7. Extending tabulations to two or more pages
8. Using vertical columnar headings
9. Using printed forms
10. Extending columns toward the center

Examples of each of these variations are presented on the following pages.
Blocking column headings with column margins—a column heading is usually centered over the longest line in its corresponding column. An accepted variation of this procedure is the blocked column heading which begins on the left margin of the column. Time is thus saved without detracting from the appearance or understanding of the classification.

**EXAMPLE:**

**PUBLIC HOLIDAYS IN THE UNITED STATES IN 1953**

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Date</th>
<th>Day of Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Year's Day</td>
<td>January 1</td>
<td>Thursday</td>
</tr>
<tr>
<td>Inauguration Day</td>
<td>January 20</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Lincoln's Birthday</td>
<td>February 12</td>
<td>Thursday</td>
</tr>
<tr>
<td>Washington's Birthday</td>
<td>February 22</td>
<td>Sunday</td>
</tr>
<tr>
<td>Good Friday</td>
<td>April 3</td>
<td>Friday</td>
</tr>
<tr>
<td>Easter</td>
<td>April 5</td>
<td>Sunday</td>
</tr>
<tr>
<td>Memorial Day</td>
<td>May 30</td>
<td>Saturday</td>
</tr>
<tr>
<td>Independence Day</td>
<td>July 4</td>
<td>Saturday</td>
</tr>
<tr>
<td>Labor Day</td>
<td>September 7</td>
<td>Monday</td>
</tr>
<tr>
<td>Columbus Day</td>
<td>October 12</td>
<td>Monday</td>
</tr>
<tr>
<td>Armistice Day</td>
<td>November 11</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Thanksgiving Day</td>
<td>November 26</td>
<td>Thursday</td>
</tr>
<tr>
<td>Christmas Day</td>
<td>December 25</td>
<td>Friday</td>
</tr>
</tbody>
</table>
Placing short tables off-center—short tabulated columns can be improved in appearance if they are placed approximately one-half inch above the vertical center of the paper. This can be done easily by simply computing vertical centering on the basis of 60 vertical line spaces to the sheet of paper rather than the standard 66 line spaces.

**EXAMPLE:**

Sacramento Senior High School

**BASKETBALL SCHEDULE**

1952 - 1953

<table>
<thead>
<tr>
<th>Date</th>
<th>Opponent</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 9</td>
<td>San Juan</td>
</tr>
<tr>
<td>December 12</td>
<td>Napa</td>
</tr>
<tr>
<td>December 16</td>
<td>Armijo</td>
</tr>
<tr>
<td>January 16</td>
<td>Lodi</td>
</tr>
<tr>
<td>January 20</td>
<td>Woodland</td>
</tr>
<tr>
<td>January 30</td>
<td>McClatchy</td>
</tr>
<tr>
<td>February 10</td>
<td>Christian Brothers</td>
</tr>
<tr>
<td>February 13</td>
<td>Turlock</td>
</tr>
<tr>
<td>February 20</td>
<td>Grant</td>
</tr>
<tr>
<td>February 27</td>
<td>McClatchy</td>
</tr>
</tbody>
</table>
Using leaders in matching items—leaders are periods typed horizontally in a series. A line of periods typed from one column of tabulated material to another column facilitates the reading of the information. The leaders must be typed uniformly on each line one under the other. A space may or may not be used before and after the period.

Where leaders are used, the typist does not use the tabulator bar or key. The periods are typed horizontally with the columns. Nevertheless, the columnar measurements are computed in the usual manner and are recorded on the rough-outline pattern. The columnar margins thus provide the point to which the leaders are to extend from one column to the other.

EXAMPLE:

**BASEBALL CHAMPIONSHIPS**

**Major League Pennant Winners**

1940 -- 1952

<table>
<thead>
<tr>
<th>American League</th>
<th>National League</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td><strong>Champion Team</strong></td>
</tr>
<tr>
<td>1940...........</td>
<td>Detroit</td>
</tr>
<tr>
<td>1941...........</td>
<td>New York</td>
</tr>
<tr>
<td>1942...........</td>
<td>New York</td>
</tr>
<tr>
<td>1943...........</td>
<td>New York</td>
</tr>
<tr>
<td>1944...........</td>
<td>St. Louis</td>
</tr>
<tr>
<td>1945...........</td>
<td>Detroit</td>
</tr>
<tr>
<td>1946...........</td>
<td>Boston</td>
</tr>
<tr>
<td>1947...........</td>
<td>New York</td>
</tr>
<tr>
<td>1948...........</td>
<td>Cleveland</td>
</tr>
<tr>
<td>1949...........</td>
<td>New York</td>
</tr>
<tr>
<td>1950...........</td>
<td>New York</td>
</tr>
<tr>
<td>1951...........</td>
<td>New York</td>
</tr>
<tr>
<td>1952...........</td>
<td>New York</td>
</tr>
</tbody>
</table>
Tabulating data in letters—regardless where they appear, some types of data are easier to read in tabulated form than in paragraph form. Consequently, when such information becomes a part of the body of a letter, it is best tabulated.

The tabulated section is preceded and followed by a double-space and is indented at least five spaces from both margins.

EXAMPLE:

2715 Sierra Boulevard
Sacramento 12, California
November 12, 1952

The Globe Book Shop
317 Alameda Street
San Francisco 10, California

Gentlemen:

There are four books I would like to have among those listed in your advertisement in yesterday's Bay City News. Please send me these:

THE LOW HILLS......T. W. Rhodes......$5.95
HAPPY JOURNEY......Adrian Dunne...... 4.25
LIBERTY CITY......John Farley...... 5.50
SOUTHERN MOON......Emily Dixon...... 3.75

$19.45
Tax .58
$20.03

I am enclosing a postal money order for $20.03 which includes the price of the books and 3% sales tax.

Very truly yours,

(Miss) Ruth A. Clark

Enclosure
Using lines to mark separation of columns and headings—in order to facilitate the reading of tabulated data, vertical and horizontal lines can be drawn to separate the various sections of the table. Horizontal lines are typed with the underscore key and vertical lines are drawn with pen or pencil. If uniformity in appearance of lines is essential, all lines may be drawn with pen or pencil.

If the typewriter is equipped with an extra-long carriage, both vertical and horizontal lines may be typed with the underscore key.

Horizontal double lines are sometimes used to emphasize a separation such as that which may appear before and after column headings.

Lines should be inserted after the data have been tabulated. No special allowance need be made for the lines when planning the tabulation measurements. However, the lines must be inserted so that they equally serve the columns of space. When lines are drawn to separate columns and headings, lines should likewise be drawn to surround the entire table.

EXAMPLE:

<table>
<thead>
<tr>
<th>LARGEST OCEANS AND SEAS OF THE WORLD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ocean or Sea</strong></td>
</tr>
<tr>
<td>Pacific Ocean</td>
</tr>
<tr>
<td>Atlantic Ocean</td>
</tr>
<tr>
<td>Indian Ocean</td>
</tr>
<tr>
<td>Arctic Ocean</td>
</tr>
<tr>
<td>Mediterranean Sea</td>
</tr>
<tr>
<td>Bearing Sea</td>
</tr>
<tr>
<td>Caribbean Sea</td>
</tr>
<tr>
<td>Sea of Okhotsk</td>
</tr>
<tr>
<td>East China Sea</td>
</tr>
<tr>
<td>Hudson Bay</td>
</tr>
<tr>
<td>Sea of Japan</td>
</tr>
<tr>
<td>Red Sea</td>
</tr>
<tr>
<td>Black Sea</td>
</tr>
<tr>
<td>Baltic Sea</td>
</tr>
</tbody>
</table>
Using Footnotes in tabulated data—an explanatory comment concerning a specific item in the tabulation is ordinarily placed in the form of a footnote below the tabulation. If just one explanatory comment is to be made on one page of tabulated material, an asterisk (*) is inserted directly following the word or number to be explained. The asterisk is likewise used to introduce the comment or footnote below the tabulation.

If more than one footnote reference is made on tabulated data, each reference is numbered with Arabic numerals. The numbers are typed one-half line space above the normal line of writing both at the point of reference and in the footnote position. This is done by turning the cylinder (platen) one-half line space forward when typing the numbers. In order to distinguish footnote-reference numbers from numerical tabulations small letters of the alphabet may be used instead of Arabic numerals.

Footnotes are separated from unlined tabulations by a one and one-half inch line (underscore) which starts on the left margin one double space below the last line of the tabulation. The footnote is typed on the left margin one double space below this line of separation. On lined tables footnotes are typed even with the left margin of the tabulation, one double space below the bottom line of the table.

**EXAMPLE:**

**CALIFORNIA WEATHER STATION REPORTS**

**February 25**

<table>
<thead>
<tr>
<th>City</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakersfield</td>
<td>61</td>
<td>33</td>
</tr>
<tr>
<td>El Centro</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Bureka</td>
<td>51</td>
<td>38</td>
</tr>
<tr>
<td>Fairfield</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>Fresno</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>Los Angeles*</td>
<td>64</td>
<td>46</td>
</tr>
<tr>
<td>Monterey</td>
<td>57</td>
<td>41</td>
</tr>
<tr>
<td>Mt. Shasta</td>
<td>47</td>
<td>20</td>
</tr>
<tr>
<td>Red Bluff</td>
<td>58</td>
<td>31</td>
</tr>
<tr>
<td>Sacramento*</td>
<td>57</td>
<td>35</td>
</tr>
<tr>
<td>San Diego</td>
<td>63</td>
<td>52</td>
</tr>
<tr>
<td>San Francisco*</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>Stockton</td>
<td>58</td>
<td>37</td>
</tr>
<tr>
<td>Susanville</td>
<td>42</td>
<td>33</td>
</tr>
<tr>
<td>Williams</td>
<td>57</td>
<td>30</td>
</tr>
</tbody>
</table>

* airport weather station
Extending tabulations to two or more pages—when tabulations require more than one page, the first page has a top margin of one and one-half to two inches and a bottom margin of one inch. Subsequent pages should have one-inch top and bottom margins. Thus, a rough-outline sketch showing vertical measurements must be made for each page where a change in top and bottom margins occurs. Horizontal measurements remain the same for each page.

Ordinarily, when tabulated material extends to two or more pages, the main and secondary headings need not be carried to each page, but the column headings are usually typed on each page in order to insure continuity in reading. However, the content of the material itself will be a determining factor as to whether or not the reader would benefit from repeated headings. Consequently, when the typist arranges the data, he must decide by the nature of the material as to whether or not main, secondary, and column headings need be repeated on each page.

Beginning with the second page of the tabulation, each page is numbered in a uniform way. The first page is not numbered, but the number is counted so that the second page bears number two. Numbers may appear

1. one-half inch (line 4) from the top edge of the paper and one inch from the right edge of the paper
2. centered one-half inch (line 4) from the top edge of the paper
3. centered one-half inch (line 63) from the bottom edge of the paper

Page numbers may

1. be preceded and followed by a hyphen
2. be placed in parentheses
3. stand alone
4. be written as a word rather than as a number; in this case, the word “page” precedes the word
5. be written as a number but preceded by the word “page”
Using vertical columnar headings—when column headings are much wider in strokes than their columns, the headings may be placed side-ways in a vertical position in order to facilitate the reading of the columns and to maintain a closer relationship between the columns.

Vertical column headings are typed so that they all face the right edge of the paper. Each heading is centered vertically within its allotted space and begins at the same horizontal point about one double space above the columns. As a matter of appearance, vertical column headings should be separated by lines which likewise separate the columns. The lines are drawn after the problem is typed but before the column headings are inserted.

**EXAMPLE:** MONTHLY RECORD OF PAUL MARTIN'S EXPENSES

<table>
<thead>
<tr>
<th>Month</th>
<th>Room and Board</th>
<th>Laundry and Dry Cleaning</th>
<th>Transportation</th>
<th>Entertainment</th>
<th>Clothing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>92.50</td>
<td>7.50</td>
<td>8.00</td>
<td>11.00</td>
<td>14.00</td>
<td>133.00</td>
</tr>
<tr>
<td>Feb.</td>
<td>89.75</td>
<td>5.00</td>
<td>10.95</td>
<td>7.90</td>
<td>8.25</td>
<td>121.85</td>
</tr>
<tr>
<td>Mar.</td>
<td>91.00</td>
<td>3.25</td>
<td>9.15</td>
<td>12.50</td>
<td>22.50</td>
<td>138.40</td>
</tr>
<tr>
<td>Apr.</td>
<td>93.75</td>
<td>5.25</td>
<td>7.25</td>
<td>5.75</td>
<td>12.85</td>
<td>124.65</td>
</tr>
<tr>
<td>May</td>
<td>88.40</td>
<td>4.95</td>
<td>8.35</td>
<td>4.20</td>
<td>7.25</td>
<td>113.15</td>
</tr>
<tr>
<td>June</td>
<td>94.00</td>
<td>5.35</td>
<td>9.45</td>
<td>6.80</td>
<td>13.95</td>
<td>134.65</td>
</tr>
<tr>
<td>July</td>
<td>92.10</td>
<td>4.65</td>
<td>6.85</td>
<td>9.65</td>
<td>5.50</td>
<td>118.75</td>
</tr>
<tr>
<td>Aug.</td>
<td>89.25</td>
<td>3.55</td>
<td>10.15</td>
<td>12.75</td>
<td>9.65</td>
<td>125.65</td>
</tr>
<tr>
<td>Sept.</td>
<td>92.75</td>
<td>4.00</td>
<td>7.55</td>
<td>8.85</td>
<td>3.20</td>
<td>116.35</td>
</tr>
<tr>
<td>Oct.</td>
<td>93.15</td>
<td>5.15</td>
<td>6.50</td>
<td>7.80</td>
<td>16.85</td>
<td>129.45</td>
</tr>
<tr>
<td>Nov.</td>
<td>87.20</td>
<td>5.95</td>
<td>6.95</td>
<td>9.40</td>
<td>12.50</td>
<td>122.00</td>
</tr>
<tr>
<td>Dec.</td>
<td>90.75</td>
<td>6.15</td>
<td>7.10</td>
<td>10.50</td>
<td>13.95</td>
<td>128.45</td>
</tr>
<tr>
<td>Total</td>
<td><strong>$1094.60</strong></td>
<td><strong>$61.05</strong></td>
<td><strong>$98.25</strong></td>
<td><strong>$107.10</strong></td>
<td><strong>$145.45</strong></td>
<td><strong>$1506.45</strong></td>
</tr>
</tbody>
</table>
Using printed forms--in order to save time and to facilitate the reading and filing of various types of data, printed forms are devised on which information can be typed quickly in tabulated style in a uniform manner.

Ordinarily, when forms are printed for the purpose of listing typewritten information, the headings and lines are usually likewise printed on each form in order to insure uniformity and to avoid unnecessary typing of the lines. The information must, therefore, be arranged so that it can be typed in the columns and line spacing provided.

Data are centered horizontally within columns. The longest line in each column determines the columnar margin. When individual horizontal lines are printed for each typewritten line, the words should not be centered vertically within the line space provided, but they should be typed slightly above the printed line in order to facilitate reading.

(Example on next page)
# SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
## PRINCIPAL'S MONTHLY TIME REPORT ON TEACHER ABSENCE

Sacramento Senior High School From April 16, 1953 To May 15, 1953

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Date</th>
<th>Time Lost</th>
<th>Cause of Absence</th>
<th>Tardy</th>
<th>Date</th>
<th>Time Lost</th>
<th>Substitute</th>
<th>Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edna Connors</td>
<td>16-20</td>
<td>3</td>
<td>Influenza</td>
<td></td>
<td></td>
<td></td>
<td>Richard Rodgers</td>
<td>3</td>
</tr>
<tr>
<td>Peter Dickson</td>
<td>16-17</td>
<td>2</td>
<td>Cold</td>
<td></td>
<td>17</td>
<td>8</td>
<td>Patricia Longman</td>
<td>2</td>
</tr>
<tr>
<td>Emily Dobson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jane Driscoll</td>
<td>20-23</td>
<td>4</td>
<td>Pulled tendon</td>
<td></td>
<td></td>
<td></td>
<td>Paul Random</td>
<td>4</td>
</tr>
<tr>
<td>Julia Eckert</td>
<td>16</td>
<td>1</td>
<td>Cold</td>
<td></td>
<td>17</td>
<td></td>
<td>Cecelia Goodstone</td>
<td>1</td>
</tr>
<tr>
<td>Helen Finley</td>
<td>16-20</td>
<td>3</td>
<td>Stomach disorder</td>
<td></td>
<td></td>
<td></td>
<td>Edward Schultz</td>
<td>3</td>
</tr>
<tr>
<td>Grant Foster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robert Gormley</td>
<td>16-20</td>
<td>3</td>
<td>Broken wrist</td>
<td></td>
<td></td>
<td></td>
<td>Agnes Miller</td>
<td>3</td>
</tr>
<tr>
<td>Philip Larson</td>
<td>23</td>
<td>1</td>
<td>Dental work</td>
<td></td>
<td></td>
<td></td>
<td>Gladys Thompson</td>
<td>1</td>
</tr>
<tr>
<td>Agnes Matson</td>
<td>21-27</td>
<td>5</td>
<td>Influenza</td>
<td></td>
<td></td>
<td></td>
<td>Mabel Fox</td>
<td>5</td>
</tr>
<tr>
<td>Joan Mitchell</td>
<td>29-1</td>
<td>3</td>
<td>Knee dislocation</td>
<td></td>
<td></td>
<td></td>
<td>Anthony Packard</td>
<td>3</td>
</tr>
<tr>
<td>James Oakley</td>
<td>1-4</td>
<td>2</td>
<td>Infected toe</td>
<td></td>
<td></td>
<td></td>
<td>Bruce Negley</td>
<td>2</td>
</tr>
<tr>
<td>Dean Roth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edith Simpson</td>
<td>6</td>
<td>1</td>
<td>Cold</td>
<td></td>
<td></td>
<td></td>
<td>Horace Reese</td>
<td>1</td>
</tr>
<tr>
<td>John Snow</td>
<td>7-11</td>
<td>3</td>
<td>Sinus infection</td>
<td></td>
<td></td>
<td></td>
<td>William Jordan</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTE**—Teachers' Time Reports Must Be Filed by the Principal in the Office of the Superintendent on the 15th day of Each Month and Must Include Teaching Done to, and Including, the 15th.
Extending columns toward the center—in the typing of two-column program announcements, the left and right margins are kept rigidly straight. Each column extends toward the center.

The left margin stop is set for the first column, and the tabulator is set at the point of the right margin. From this right margin point the typist backspaces one for each stroke—minus one for the first stroke already in position—in the column line. At the point of the last backspace the column line begins.

EXAMPLE:

180TH ANNUAL COMMENCEMENT

June 11, 1953

PROGRAM

Presentation of Colors

"Star-Spangled Banner"

Processional

Invocation

Musical Selections

Senior Class Oration

Presentation of the Class of 1953

Awarding of Scholarships

Awarding of Diplomas

Recessional

"March Tempore"

Color Guard

Orchestra

Graduates

Dr. John Haynes, First Methodist Church

Orchestra

Jane McClure

Dr. Henry Fisher, Superintendent of Schools

Mr. William Farrell, Principal

Dr. Taylor Lewis, President, Board of Education

Graduates

Orchestra
Problems in tabulation—the ten problems which follow are designed to illustrate the basic principles involved in tabulation presented on pages 29-49. These problems are arranged in the simple-to-complex order.

PROBLEM 1

Type this list of student-body officers in two columns, single-spaced, on a whole sheet of paper. Center the problem horizontally and vertically. Allow 4 spaces between columns.

STUDENT-BODY OFFICERS

President
Boys' Vice President
Girls' Vice President
Secretary
Head Yell Leader
Assistant Yell Leaders

Advertising Manager
Athletic Manager
Chairman of Civic Service
Treasurer
Newspaper Editor
Chairman of Student Publications
Yearbook Editor
Chairman of Central Elections
Chairman of Social Welfare
Chairman of Military Affairs
Chief Justice
Associate Justices

Attorney General
Historian
Finance Committee

Songsters

James Parker
Patrick R. Fletcher
Eileen Clayton
Sandra Benedict
Claudia Griffith
Joan Clinton
Anita Graham
Curtis Hillary
Clifford Arnold
Nathaniel Simpson
Lois Myerson
Lucille Hunter
Mildred Abraham
Duane Alexander
Helen Craig
Betsy Remmer
Harvey J. Warner
Richard Daniels
Bernard Everett
Julius Sullivan
Gerald Wesley
Shirley Newton
Willis Owen
Oliver Smith
Janet Thaddeus
Marian Ellis
Sue Cadwallader
Beverly Clark
Carol Hutchinson
Judith Albertson
PROBLEM 2

Type this calendar of school events for the month of February. Center the problem horizontally and vertically. Use double-spacing. Allow 6 spaces between columns.

SACRAMENTO SENIOR HIGH SCHOOL

Calendar of Events

February

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, February 2</td>
<td>Second term begins</td>
</tr>
<tr>
<td>Wednesday, February 4</td>
<td>Sophomore Rush, 4:00 p.m.</td>
</tr>
<tr>
<td>Friday, February 6</td>
<td>Basketball game - Christian Brothers School</td>
</tr>
<tr>
<td>Monday, February 9</td>
<td>Yearbook pictures taken</td>
</tr>
<tr>
<td>Wednesday, February 11</td>
<td>Track meet - Stockton High School</td>
</tr>
<tr>
<td>Thursday, February 12</td>
<td>Holiday - Lincoln's Birthday</td>
</tr>
<tr>
<td>Monday, February 16</td>
<td>Senior Play, 8:00 p.m.</td>
</tr>
<tr>
<td>Wednesday, February 18</td>
<td>Assembly, 11:00 a.m. Dr. Ralph Nelson, speaker</td>
</tr>
<tr>
<td>Thursday, February 19</td>
<td>Basketball game - Woodland High School</td>
</tr>
<tr>
<td>Friday, February 20</td>
<td>Vocational Conference Day</td>
</tr>
<tr>
<td>Monday, February 23</td>
<td>Holiday - Washington's Birthday</td>
</tr>
<tr>
<td>Wednesday, February 25</td>
<td>Class councils meet, 7:30 p.m.</td>
</tr>
<tr>
<td>Thursday, February 26</td>
<td>Class office campaign begins</td>
</tr>
<tr>
<td>Friday, February 27</td>
<td>Junior Prom, 9:00 p.m. Governor's Hall</td>
</tr>
</tbody>
</table>
PROBLEM 3

Type this list of California cities and their population in two columns on a half sheet of paper. Use single-spacing. Center the problem horizontally and vertically. Allow 7 spaces between columns. Use these headings:

Main heading: CALIFORNIA CITIES WITH A POPULATION OF OVER 100,000
Secondary heading: 1950 Census Report
First column heading: Cities
Second column heading: Population

<table>
<thead>
<tr>
<th>Cities</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>1,970,358</td>
</tr>
<tr>
<td>San Francisco</td>
<td>775,357</td>
</tr>
<tr>
<td>Oakland</td>
<td>384,575</td>
</tr>
<tr>
<td>San Diego</td>
<td>334,387</td>
</tr>
<tr>
<td>Long Beach</td>
<td>250,767</td>
</tr>
<tr>
<td>Sacramento</td>
<td>137,572</td>
</tr>
<tr>
<td>Berkeley</td>
<td>113,805</td>
</tr>
<tr>
<td>Pasadena</td>
<td>104,577</td>
</tr>
</tbody>
</table>

PROBLEM 4

Type this list of cabinet officers in three columns on a half sheet of paper. Use double-spacing. Center the problem horizontally and vertically. Allow 5 spaces between columns. Use these headings:

Main heading: UNITED STATES CABINET OFFICERS
Secondary heading: February 1, 1955
First column heading: Office
Second column heading: Officer
Third column heading: Home State

<table>
<thead>
<tr>
<th>Office</th>
<th>Home State</th>
<th>Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretary of State</td>
<td>New York</td>
<td>John Foster Dulles</td>
</tr>
<tr>
<td>Secretary of the Treasury</td>
<td>Ohio</td>
<td>George M. Humphrey</td>
</tr>
<tr>
<td>Secretary of Defense</td>
<td>Michigan</td>
<td>Charles E. Wilson</td>
</tr>
<tr>
<td>Attorney General</td>
<td>New York</td>
<td>Herbert Brownell</td>
</tr>
<tr>
<td>Postmaster General</td>
<td>Michigan</td>
<td>Arthur Summerfield</td>
</tr>
<tr>
<td>Secretary of the Interior</td>
<td>Oregon</td>
<td>Douglas McKay</td>
</tr>
<tr>
<td>Secretary of Agriculture</td>
<td>Utah</td>
<td>Ezra Benson</td>
</tr>
<tr>
<td>Secretary of Commerce</td>
<td>Massachusetts</td>
<td>Sinclair Weeks</td>
</tr>
<tr>
<td>Secretary of Labor</td>
<td>Illinois</td>
<td>Martin Durkin</td>
</tr>
</tbody>
</table>
PROBLEM 5

Type this list of ratings of enlisted personnel in the Armed Services. Use single-spacing on a half sheet of paper. Center the problem horizontally and vertically. Allow 8 spaces between columns. Use these headings:

Main heading: ENLISTED PERSONNEL IN THE UNITED STATES ARMED FORCES
Secondary heading: Comparative Ratings
First column heading: Army and Air Force
Second column heading: Navy and Coast Guard

Master Sergeant
Sergeant, 1st Class
Sergeant
Corporal
Private, 1st Class
Private

Chief Petty Officer
Petty Officer, 1st Class
Petty Officer, 2nd Class
Petty Officer, 3rd Class
Seaman
Apprentice Seaman

PROBLEM 6

Re-arrange these 1952 University of California football scores so that they may be more easily read. Then tabulate the problem into as many columns as you think necessary on a whole sheet of paper to make it attractive. Apply the rules for spacing and placement presented in this Manual. Decide upon an appropriate main heading. Use a secondary heading and column headings if you think they are necessary.

California 34; College of Pacific 13
California 29; Missouri 14
Minnesota 13; California 49
Oregon 7; California 41
California 27; Santa Clara 7
Southern California 10; California 0
UCLA 28; California 7
California 7; Washington 22
California 25; Washington State 13
Stanford 0; California 26
Re-arrange this list of names and addresses into three columns on a whole sheet of paper. Use single-spacing. Number each name. Allow as many spaces between columns as you think appropriate. Use these headings:

Main heading: The Valley Office Equipment Company, 2643 Sunset Avenue, Sacramento, California
Secondary heading: Waiting List for 1953 for All-Metal Flat-top Desks
First column heading: Customer
Second column heading: Street and Number
Third column heading: City

<table>
<thead>
<tr>
<th>George C. Powell</th>
<th>1517 Santa Rosa Drive, North Sacramento</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elizabeh Larsen</td>
<td>2213 Third Avenue, Sacramento</td>
</tr>
<tr>
<td>Richard Callahan</td>
<td>1809 West River Road, Sacramento</td>
</tr>
<tr>
<td>John McDonald</td>
<td>380 Washington Street, Sacramento</td>
</tr>
<tr>
<td>Betty Kline</td>
<td>Route 3, Box 1510, Davis</td>
</tr>
<tr>
<td>Vincent Lyon</td>
<td>161 34th Street, Sacramento</td>
</tr>
<tr>
<td>Peter Wilcox</td>
<td>2100 Phillips Way, Roseville</td>
</tr>
<tr>
<td>Jane Marie Dawson</td>
<td>5119 Sierra Avenue, Sacramento</td>
</tr>
<tr>
<td>Evelyn Hopkins</td>
<td>1430 Evergreen Court, Marysville</td>
</tr>
<tr>
<td>Henry Richards</td>
<td>2517 Riverview Drive, Jackson</td>
</tr>
<tr>
<td>Wesley Robinson</td>
<td>25151 Orange Street, Folsom</td>
</tr>
<tr>
<td>John Townsend</td>
<td>1006 Elm Street, Colusa</td>
</tr>
<tr>
<td>Charlotte Underwood</td>
<td>125 Harbor Drive, Sacramento</td>
</tr>
<tr>
<td>Esther Burke Hamilton</td>
<td>2660 Marion Place, North Sacramento</td>
</tr>
<tr>
<td>James Allison</td>
<td>2017 Benjamin Franklin Boulevard, Sacramento</td>
</tr>
<tr>
<td>M. W. Gillespie</td>
<td>2193 Pacific Avenue, Sacramento</td>
</tr>
<tr>
<td>Glenn Robertson</td>
<td>3341 Rainbow Lane, Fair Oaks</td>
</tr>
<tr>
<td>Frances Nichols</td>
<td>1878 Cleveland Road, Sacramento</td>
</tr>
<tr>
<td>Margaret Stewart</td>
<td>Route 8, Box 17, North Sacramento</td>
</tr>
<tr>
<td>Frederick Taylor</td>
<td>6550 Superior Boulevard, Sacramento</td>
</tr>
<tr>
<td>Donald T. Meredith</td>
<td>5163 Commercial Street, Sacramento</td>
</tr>
<tr>
<td>Harry Kelly</td>
<td>201 Jefferson Street, Davis</td>
</tr>
<tr>
<td>Jerome Edwards</td>
<td>1432 Massachusetts Street, North Sacramento</td>
</tr>
<tr>
<td>Victor Armour</td>
<td>7930 Jackson Street, Lodi</td>
</tr>
<tr>
<td>Calvin Walters</td>
<td>6040 New Orleans Avenue, Fairfield</td>
</tr>
<tr>
<td>Jack Mills</td>
<td>Route 10, Box 1519, Sacramento</td>
</tr>
<tr>
<td>Beverly Chambers</td>
<td>3093 Adams Boulevard, Sacramento</td>
</tr>
<tr>
<td>William Cramer</td>
<td>7120 College Drive, Sacramento</td>
</tr>
<tr>
<td>R. K. Lindstrom</td>
<td>4469 Coleman Avenue, North Sacramento</td>
</tr>
<tr>
<td>Ralph Simpson</td>
<td>1011 Fairhope Street, Marysville</td>
</tr>
<tr>
<td>Anthony Birmingham</td>
<td>3223 M Street, Sacramento</td>
</tr>
<tr>
<td>Frank Denver</td>
<td>107 Pine Road, Roseville</td>
</tr>
<tr>
<td>Patricia Scott</td>
<td>204 Greenbrier Lane, North Sacramento</td>
</tr>
<tr>
<td>Wilbur Irvine</td>
<td>1008 Cedar Street, Sacramento</td>
</tr>
<tr>
<td>Joseph Johnson</td>
<td>12 Whitehouse Avenue, Sacramento</td>
</tr>
</tbody>
</table>
PROBLEM 8

Arrange a copy of your daily class schedule into four columns with these headings:

Period
Subject
Room
Teacher

Decide upon an appropriate main heading. Center the problem horizontally and vertically on a half sheet of paper. Determine your own line spacing and spacing between columns.

PROBLEM 9

Tabulate the names of these 34 highest mountain peaks in the United States in an attractive columnar arrangement on a whole sheet of paper. Use as many columns as you think necessary. Each mountain is listed by name with its location and height in feet. Determine your own headings and spacing.

Mt. Whitney, California, 14,495; Elbert, Colorado, 14,431; Massive, Colorado, 14,418; Rainier, Washington, 14,408; Harvard, Colorado, 14,399; Blanca, Colorado, 14,390; Williamson, California, 14,384; La Plata, Colorado, 14,340; Uncompahgre, Colorado, 14,306; Creston, Colorado, 14,291; Lincoln, Colorado, 14,284; Grays, Colorado, 14,274; Torrey's, Colorado, 14,264; Evans, Colorado, 14,260; Castle, Colorado, 14,259; Longs, Colorado, 14,255; Sill, California, 14,254; Palisade (north), California, 14,254; Quandary, Colorado, 14,252; Mt. Wilson, Colorado, 14,250; Antero, Colorado, 14,245; White, California, 14,242; Shavano, Colorado, 14,239; Cameron, Colorado, 14,238; Princeton, Colorado, 14,196; Russell, California, 14,190; Yale, Colorado, 14,172; Bross, Colorado, 14,170; Shasta, California, 14,162; Point Success, Washington, 14,150; San Luis, Colorado, 14,149; Sneffels, Colorado, 14,145; Democrat, Colorado, 14,142; Crestone Needle, Colorado, 14,130.
PROBLEM 10

Arrange the names listed below into four columns with these headings:

<table>
<thead>
<tr>
<th>Orchestra</th>
<th>Band</th>
<th>Mixed Chorus</th>
<th>Choir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Kellogg, Mixed Chorus; Mary Garfield, Choir; James Higgins, Band; Anthony Peterson, Orchestra; Wilma Mecklin, Orchestra; Joseph Garcia, Band; Helen Stewart, Choir; Glenn O'Connor, Mixed Chorus; Irvin Maxwell, Orchestra; Robert Stetson, Choir; Louis Rodgers, Mixed Chorus; Eugene Temple, Band; Pauline Laird, Mixed Chorus; Florence Taylor, Band; Clarence Fields, Orchestra; Jesse Phillips, Choir; Walter Allen, Band; John Cook, Choir; Charles Meredith, Orchestra; Esther Campbell, Mixed Chorus; Raymond Coleman, Mixed Chorus; Beverly Miller, Band; Alfred Simmons, Choir; Theodore Fisher, Orchestra; Dorothy Boyer, Band; Charles Black, Mixed Chorus; Benjamin Craig, Choir; Earl Keller, Orchestra; Janet Cornwall, Mixed Chorus; Julia Fox, Choir; Lawrence Hayes, Orchestra; Carl Thompson, Band; Richard Weber, Choir; Philip Gray, Orchestra; Patrick Ryan, Band; Carol Randolph, Mixed Chorus; Catherine Smith, Band; Victor Madison, Orchestra; David Harper, Choir; Stanley Harris, Mixed Chorus; Marie Clark, Mixed Chorus; Gemal Douglas, Choir; Christopher Morris, Band; Frances Richardson, Orchestra; Edgar Hawkins, Mixed Chorus; Michael Wilson, Choir; Peter Kelly, Band; Arthur Clark, Orchestra; Lucille Baker, Mixed Chorus; Virginia Allison, Band; Norman King, Orchestra; Edith Shepard, Choir; Albert Perkins, Mixed Chorus; Chester Wolf, Band; Harold Gross, Orchestra; Floyd Marshall, Choir; Georgia Kimball, Choir; Calvin Sanders, Mixed Chorus; Claude Kennedy, Band; Edna Brooks, Choir; Jacob Hall, Mixed Chorus; Ronald Wagner, Band; Beatrice Foster, Orchestra; Howard Franklin, Mixed Chorus; Bernard Long, Orchestra; Evelyn Young, Choir; Vivian Underwood, Orchestra; David Randall, Band; Russell Newton, Mixed Chorus; Warren Newburg, Orchestra; Bruce Elliott, Orchestra; Harry Cooper, Band; Raymond Bell, Choir; Lester Alexander, Choir; Alice Oliver, Mixed Chorus; Doris Hill, Band.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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SELECTED ANNOTATED BIBLIOGRAPHY

FOR THE PROJECT
SELECTED ANNOTATED BIBLIOGRAPHY


Offers several good ideas on teaching methods particularly in the area of tabulation.


Report on the current status and trends of business education programs in the public schools of California.


Instructor at the Georgia State College for Women points out that typewriting textbooks are still emphasizing the unitary skill of machine operation in advanced typewriting rather than emphasizing the need for judgment in the application of this skill in production typing.


Strictly a reference manual. Mainly by diagram, it simplifies forty-eight specific topics involving typewriting principles.


Emphasizes that one of the major problems facing business-education administrators today is the designing of and implementing a program of vocational business training suitable for the sub-standard pupil. Insists that text material must be interpreted and simplified in order to reach the student; the student cannot be made to reach the text.

Well-written article with emphasis on the importance of carefully choosing typewriting motivating devices which have current and familiar value to the student. Contains many helpful suggestions.


Calls attention to factors concerning organization of materials, improvement of instruction, and essential duties so important at any time to the teacher of typewriting.


Deals with new ideas concerning simplification of text materials.


Very good for ideas on simplified material. Much of it will appeal to the non-vocational typist.


Deals mainly with the methods of teaching skill in the development of speed and accuracy, but the last topic on "Predicting Ability to Learn Typewriting" is particularly pertinent in considering the problem of student inability versus textbook inadequacy.


Points out the necessity for every teacher to amplify and to supplement textbook material in order to meet the needs of the individual and of the community.

A valuable guide to use in simplifying materials. Covers punctuation, syllabication, tabulation, grammar, style letters, manuscripts, and other techniques.


Interesting manual in which basic principles of typewriting are discussed in straight-copy material set up in thirty-seven fifteen-minute timed writings. Each one of the timed writings is numbered as a lesson and pertains to a specific typewriting technique. It serves to clarify some hard-to-teach techniques.


Very helpful to students who find it difficult to learn placement of typed materials. Entire book is presented on typewritten plates which indeed simplifies it.


Discussion of the eight major deficiencies observed in the more than one thousand WAVE advanced-typing students in training at the United States Naval Training School for Storekeepers at Indiana University during World War II. One of the eight deficiencies listed is the lack of a sense of balance in the preparation of typewritten copy. Methods are suggested for correction of this deficiency.


Contains a list of research studies on the teaching of typewriting with abstracts of four hundred and forty-four studies made prior to 1950.

Very informative article by a business teacher in New York City. Offers many worthwhile ideas on ways and means of bringing typewriting text material within the concept of the slow learner.


Stresses need for typewriting teachers to consider individual differences among students. Urges teachers to discover new methods of reaching students as soon as present methods obviously do not produce results.


Well-known authority on the subject of typewriting is concerned with the apparent lack of judgment shown by students in problems where balance and placement are involved.


Very good source for copy material on centering and tabulation for selected students. Below-average students may find directions to problems vague and hard to understand. Better as a source for supplementary material for high-school teacher of typing rather than a textbook for students.


Emphasizes need for different methods and subject matter for slow learners in typing classes. Explains why this problem is growing fast and requires serious and immediate consideration by all business educators.