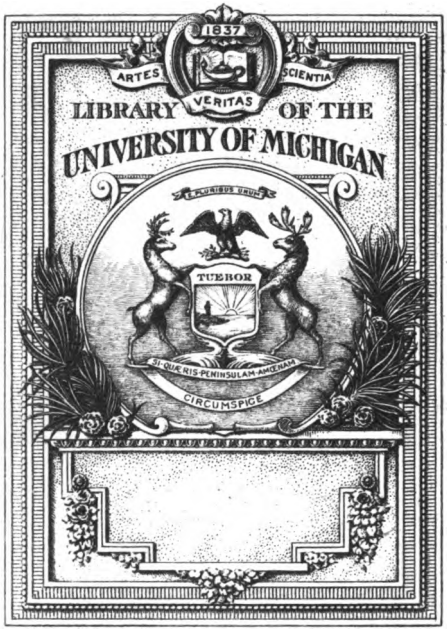
TABULAR
COMPOSITI



TYPOGRAPHIC TECHNICAL SERIES FOR APPRENTICES — PART II, NO. 21

TABULAR COMPOSITION

A STUDY OF THE ELEMENTARY FORMS OF TABLE COMPOSITION WITH EXAMPLES OF MORE DIFFICULT TABULAR COMPOSITION

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INTRODUCTION

THE principles of tabular composition are but little understood in most printing offices. For this reason much of the tabular work done lacks uniformity.

This absence of uniformity is primarily due to mathematical ignorance, that is to say that the average compositor does not apply the mathematics of the modern point system to his tabular work, but continues to "cast up," space, lead out, "box," etc., a good deal after the fashion in vogue when printers were obliged to use "old standard" type bodies. This is seen in many ways (the use of the "thick space" period instead of a leader cast on an en-quad body, for instance) and is the reason for odd-cut rules and other irregularities.

Tabular work requires more than ordinary composition-knowledge. A good tabular compositor must not only be a master of the theory and practice of modern typography but in addition must be a specialist upon several composition phases.

For instance, the tabular compositor should be fully grounded in the rules of Abbreviations, he should have a fair knowledge of the decimal and fractional rules, understand space division, and have an intimate acquaintance with, and respect for, brass rule.

Compositors whose aim is to become expert tabular men are accordingly referred to the list of books for "Supplementary Reading" printed in the back of this book, a study of which, in conjunction with the study of these pages, will prove of great value.

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HOW TO SET TABLES

TABULAR, or rule and figure, work is generally considered one of the most difficult classes of composition, and the ability to set tables in an acceptable manner is considered the mark of a good workman.

Because of the large number of short leads and rules used in the setting of a table any slight inaccuracies in justification may throw the whole table out of alignment and make no end of trouble for stoneman, pressman, or electrotyper.

The typical table consists of what is known as the stub (See Example IV), which may be a column of reading matter, names, or the like, and two or more columns of figures, with headings over the whole.

The first step in the setting of a table is known as casting up. This means the computing of the amount of space each column of the table will occupy.

The usual practice is to allow enough space to accommodate the figure columns and put the rest of the space into the stub. We shall suggest some modification of this in a later paragraph.

Before the introduction of the point system the only way the compositor could cast up a table accurately was to set his stick to the desired measure and make a test of his copy by actually setting the type for the longest word in the stub and the greatest sum in each of the figure columns, separating each of these with a short piece of rule, before he could tell just how he was coming out. With the point system to aid us it is no longer necessary to do this, as a table may be cast up on paper before any type is set.

Example I

Boston	312468923	82925	78627
New York	83796536	18263798	269234
Philadelphia	2832971	183259	9876543

Suppose you are to cast up the table above.
Measure is 20 ems 12-point.
Table to be set in 8-point.
20 ems of 12-point = 240 points.
The largest number in the first figure column consists of 9 figures. A figure is cast on an en-quad body, so that each of these 8-point figures occupies a space of 4 points.

9 x 4 = 36 points occupied by figures in 1st column
8 x 4 = 32 points occupied by figures in 2d column
7 x 4 = 28 points occupied by figures in 3d column
3 x 2 = 6 points occupied by 3 rules 2 points thick
102 points occupied by figure columns and rules
240 — 102 = 138 points available for the stub
138 ÷ 12 = 11½ ems of 12-point (width of stub)

This space of 11½ ems will allow for the longest word in the stub, which is Philadelphia, with plenty of space to spare.

Suppose the numbers in the figure columns were smaller, as in Example II.

Example II

Boston	321	248	23
New York	243	23	84
Philadelphia	179	67	624

3 x 4 = 12 points in 1st figure column
3 x 4 = 12 points in 2d figure column
3 x 4 = 12 points in 3d figure column
6 points in 3 two-point rules
42 points in figure columns and rules
240 — 42 = 198 points or 16½ ems for the stub

This would leave a wide space of leaders in the stub with the figure columns crowded up close to the rules.

Therefore the table would be improved in appearance by setting the figure columns off from the rules an em quad or more.

The columns in a table should always be equalized in width as far as practicable and the left-over space divided between the columns to give a uniform appearance.

Example III

Boston	32.72	13721.21	2.48
New York	129.0623	23.489	324.325
Philadelphia	1479.02256	1.6238	68.249

This is a table involving the use of decimal points. Figure columns usually line up at the right-hand side, but in a column containing decimal points the column must be arranged to bring the decimal points one under the other. In tabular work it is customary to use a leader cast on an en-quad body in place of a period. This enables one to keep the columns to even ems or half ems. A period that is cast on a three em or four em space body necessitates the cutting of cross rules to odd lengths.

To cast up the table in Example III, allowing 4 points for the decimal point.

10 x 4 = 40 points in the 1st figure column
10 x 4 = 40 points in the 2d figure column
7 x 4 = 28 points in the 3d figure column
6 points in the 3 two-point rules
114
240 — 114 = 126 points left for stub, or 10½ ems of 12-point

So far, we have been considering merely the figure columns themselves without reference to the headings.

Headings are important for themselves and also because they sometimes affect one's calculations as to the width of the figure columns.

Example IV

THE MAIN HEADING

THE FIRST SUB-HEADING IN SMALL CAPS

The secondary sub-heading is usually set in italics

THE STUB HEADING, SET IN CAPS AND SMALL CAPS, IS CENTERED IN SPACE OPPOSITE BOX-HEADING	PRIMARY BOX-HEADING		A Table doubled on itself is divided with a double rule or single rule of heavier face
	Secondary Box-Heading Set in Caps and Lower Case	Set this way to save space	
This is..... ...	1234567890	1509	4218123.45
called.....	2345678901	232	32894.3597
the stub.....	3456789012	1845	132.8898
Leader it.....	4567890123	175	157831.09024
out for.....	Block of old-	1178	Modern figures
legibility.....	style figures		en leaders for decimal points

Rules run full length; cross rules cut.

It will be seen from this example that the main heading is set in capitals, the first sub-heading in small capitals; the second sub-heading in italics. These are the main headings of the table. The minor headings occurring over the figure columns are known as box-headings and are called the primary box-heading, the secondary box-heading, and the stub heading. Usually the stub heading and the primary box-heading are set in caps and small caps, the secondary box-headings are in caps and lower case. This rule is not arbitrary, however, for the primary box-headings are often set in lower case also, especially where there is no secondary box-heading.

The box-headings have to be considered in casting up figure columns. In general it is well to make the figure columns as nearly equal in width as possible.

In order to accomplish this, and especially where it is necessary to save all the space that is possible, a particularly wide box-head occurring over a narrow figure column may be turned to read up or down. These points are all shown in the diagram of Example IV.

Example V a

Boston.....	2	3	2
New York...	3	2	4
Philadelphia..	2	9	2
New Orleans.	3	7	6
St. Louis....	5	4	3
Chicago.....	2	9	8

A long and narrow table may often be doubled upon itself; that is, set in half measure, with a heavy faced or a double rule in the middle to indicate the division.

Example V b

Boston.....	2	3	2	New Orleans.	3	7	6
New York...	3	2	4	St. Louis....	5	4	3
Philadelphia..	2	9	2	Chicago.....	2	9	8

Good judgment will have to be used in deciding this point and others that we have mentioned in regard to the adjustment of space. The skill of the compositor in this, as in any other style of composition, is shown not only in knowing the correct method of doing a piece of work but also in knowing what modification to make when modification is necessary.

So far we have considered only the width that our table is to be set and have arranged it to have the columns make even ems of 8-point in width. The length of the table is made up to multiples of 6-point in order to fit the lengths in a font of labor-saving rule.

In an 8-point table about 4 points of white space are allowed between the top rule and the box-heading and the same on each side of the rule between box-heading and figures and between the bottom of the column of

figures and the bottom rule. This space may be increased or decreased slightly to make the columns fit the column rules.

A table is usually placed on a page in the same position as the reading matter, but it is sometimes necessary to arrange a large table in some other way. For instance the table may be turned so that the headings run from bottom to top of the page. Tables too large to be handled in this way are sometimes arranged to read across two facing pages or turned to read across two pages from outer margin to outer margin. A table too large to be accommodated in any of these ways may be cast up to make what it will and then printed separately and tipped into the book as an insert. This of course involves extra expense for presswork and binding.

Where the table is turned on the page the headings are at the outer or front margin if the table comes on a left-hand page and at the inner or back margin if the table comes on a right-hand page. Where tables are turned to read across two facing pages from outer margin to outer margin it is not necessary to repeat the headings on the right-hand page, but if the table occupies more than the two facing pages the box-headings should be repeated on the third page and on the first of each succeeding pair of pages.

Justifying a Table

It is important that the compositor who sets tabular work should understand the method of properly spacing and justifying several columns in one measure of the stick. In many tables consisting of a stub of words and columns of figures, the matter may be set the whole width of the table in single lines, instead of justifying each column separately in the composing stick. A simple table, with vertical rules between a number of columns can be set in lines across the full width of the page if the blanks between the columns are divided with quads or spaces which will allow a straight-line opening for inserting the rules after the table is set. First obtain the number of vertical rules needed for the table and place them

in the end of the composing stick, and set the copy as for a single full line. Example:

Printing and publishing.....	$15,745,547	$2,300,946	$13,346,851
Machine shop products.....	10,490,646	3,013,958	12,228,651
Plumbing and gas fitting....	12,556,953	4,423,141	11,972,100

After the required number of lines for the table have been set, the columns may be easily separated and the rules inserted like this:

Printing and publishing.....	$15,745,547	$2,300,946	$13,346,851
Machine shop products.....	10,490,646	3,013,958	12,228,651
Plumbing and gas fitting....	12,556,953	4,423,141	11,972,100

The foregoing method is the quickest and most convenient way to set ordinary tables of this kind. For more difficult tables an extension of the same method, using thick brass rules or slugs to justify parts of the line, may be employed.

Let us take, for example, a table having, in addition to several columns of figures, two columns with words and phrases requiring different spaces to justify each line of each column. The following will illustrate the procedure:

24 pts.	64 pts.	72 pts.	36 pts.	36 pts.
1265 Worcester	Average 80%.....		$3.22	$115.25

After apportioning the necessary width for each column, and placing the needed number of vertical rules in the end of the composing stick, procure a slug or 6-point brass rule long enough to go from the second column to the rules, in this case 72 + 36 + 36 points = 144 points, or 12 picas. Set the first and second columns and justify the second up to the slug. The justifying space should be between the last letter of the word and the first leader-dot. After the copy of the third column is set, the widths of the fourth and fifth columns (36 + 36 = 72 points) may then be counted off in multiples of ems or ens (18 ens 8-point), and set the figures of the copy to these equivalents, using en decimal-points. Then insert the leaders and justify the lines of the third column up to the matter for the fourth and fifth columns. When each full line is justified, take out the justifying slugs

and use them for the next line, repeating the procedure for each line of the table. The result will be like this:

1265 Worcester ..... Average 80% $67.90 $115.25
1266 Schenectady ..... Special tax 84.12 220.35
1267 Winnipeg ..... Appropriation 57.50 83.60

When the table is set the rules are then inserted in their proper places, like this:

1265 | Worcester ..... | Average 80% ..... | $67.90 | $115.25
1266 | Schenectady ..... | Special tax ..... | 84.12 | 220.35
1267 | Winnipeg ..... | Appropriation ..... | 57.50 | 83.60

Careful attention should be given to exact and uniform justification at each step. In tabular work set in the manner above described, justification may be done reasonably tight, as the whole width of the table can be kept within the measure fixed by the composing stick. When the columns are set separately, in a stick the width of each single column, care must be exercised that the stick is set firmly up to the number of points allotted and the justification be made only reasonably tight. A little extra tightness in each column will perceptibly increase the total width of the table beyond what is required and may make it necessary, when the last column is reached, to reduce that one to an odd measure not desirable. This is a common error with beginners.

The Face of Type

Legibility should be the first consideration in selecting type for setting a table. Any proofreader knows that there is nothing so hard to read correctly as a solid mass of figures. In general, the face of type should match the type used in the rest of the book, that is, old-style figures should be used with old-style type and modern figures with modern type. Experiments have shown that old-style figures are rather more legible than modern figures and that fairly light-faced figures are more legible than those with a heavier face.

If you will refer to Example IV you will notice in the block of old-style figures, that some of them, the 3, 4, 5, 7 and 9 fall below the line, while the 6 and 8 extend above

the line. This gives them a greater variation and enables the reader to recognize them more easily. A mass of these figures is not as pleasing in appearance as the more regular modern figures. In order to attain legibility without the irregularity of the ordinary old-style figure a new form of old-style figure has been devised, known as lining old-style. These all line at the bottom and combine the old-style with modern characteristics. These figures have been found very legible in the mass and are largely used in time-table work, logarithm tables, and similar work where legibility is most important.

The Size of Type

A table is set in type that is as large as possible though not larger than the reading matter in which it occurs. It may be set in one size or even two sizes smaller than the text matter. For example: when the text is in 10-point tables should go in 8-point or 9-point. In 11 or 12-point text a 10-point table is correct. It requires some judgment to determine which will cause the reader the least annoyance,

(*a*) a table set in small type placed on the page in the ordinary way or,

(*b*) one set in larger type but turned on the page so that the reader must turn the book when he wishes to refer to the table.

In 12-point matter set a short table in 12-point, a larger one in 10-point or 8-point.
In 11-point matter set a short table in 11-point, a larger one in 10, 9, or 8-point.
In 10-point set a short table in 10-point, a larger one in 9, 8, or 6-point.
In 8-point matter set tables in 8 or 6-point.
In 6-point matter set tables in 6 or 5-point.

Leading a Table

When possible tables should be set solid, that is, with no leads between the lines, though it is sometimes necessary to use leads. In machine set tables it is a simple matter to cast

the type on a larger body to give the effect of leading. When it is necessary to lead a hand-set table this should be considered in casting up so that the columns may be cast up to multiples of 6-point in order to utilize labor-saving material. Leads are used between rules and headings and between figure columns and bottom rules. The usual amount of space allowed in these places should be one-half the body of the type used. This space may be increased or decreased to make up the total length of the column to even multiples of 6-point but in no case should the space allowed exceed one em of the type in which the table is set.

Headings of Tables

The main headings of a table are determined in size by the text matter in which the book is set and should be uniform in size throughout regardless of the size of type used for the body of the table itself. Box-heads are generally set in proportion to the size of the table itself, that is, two sizes smaller in 12, 11, or 10-point tables, and the same size as the figures in 8 and 6-point tables.

Footnotes to Tables

These are usually set in type a size smaller than the table itself when the type is larger than 6-point but notes of the same size are allowable in 6-point tables. Footnotes to tables that occur on the same page with text matter should be placed at the foot of the table itself rather than at the foot of the page.

The Selection and Use of Rules

In order to do acceptable tabular work not more than two faces of rules are necessary but these should be supplied in generous quantity and cut to labor-saving lengths. The standard fonts of rules are cut to multiples of 6-point. In some offices where a great deal of tabular work is done it has been found of immense advantage to have a supply of rules in the sizes under 48 points in length cut to the following point sizes: 6, 8, 10, 12, 16, 18, 20, 24, 30, 32, 36, 40, 42, 48. This enables the compositor to cast up narrow

columns to multiples of 6, 8, or 10-point. If 7 or 9-point tables are to be set it is well to also include rules of 7, 9, 14, 21, 27, 28, 35, and 45 points in width. While it is possible to buy rules in full length strips and cut them down this work can be done more accurately and economically by the type founder. Each of these short pieces should be stamped with its width in points as an aid to the distributor.

The rule most used in tabular work is a hair-line face on the center of a two-point body. In very crowded tables a one-point rule may be used, and this has the advantage of enabling the compositor to make very close joints with the cross rules, but the one-point rule is so thin that the slightest inequality in the justification of a column will throw it out of alignment. It is difficult to secure a good lock-up with very thin rules and very difficult to get a good electrotype.

Besides the hair-line face a rule of somewhat heavier face is desirable for boxing-in and for indicating the division when a table is doubled upon itself (See Example IV.) Books that consist largely or entirely of tables are frequently improved in appearance by boxing-in, or surrounding with rule, and this also is often done in catalogue and similar work. Usually boxing is not considered necessary in book work where a rule across the page at top and bottom is considered sufficient.

The Care of Rules and Material

The beauty of the finished table will depend somewhat upon the condition of the material used. A broken or battered rule should be discarded at once. More time is often spent in patching an old rule than would pay for many new ones. The distributor should clean all rules carefully and scrape off all accumulations of ink or wax on their sides. The larger pieces may then be put away in a regular rule case while the smaller sizes mentioned may be dropped into boxes provided for them in a specially labelled type case used for their accommodation.

Type should be thoroughly clean with no accumulation of dirt on the shoulder. The most carefully laid out table

will fail to justify or lock up properly unless the type is carefully and thoroughly cleaned after use.

Column Rules

Column rules should, as a general thing, run from top to bottom of the table in one unbroken piece, and all cross rules consist of short pieces across the columns. This plan is sometimes changed when a series of tables with the same box-heads is used. Then the column rules extend to the top of the figure columns only, making it possible to lift off the box-head entire for use on another table.

Inserting Rules in Machine Tables

An easy way to insert rules in tabular matter that has been set on machine is as follows: First turn the galley to a vertical position, placing a piece of wood furniture loosely wedged into place at the open side to prevent "pi." Run a knife blade down the column where the rule is to go opening the matter just enough to insert the rule.

Pieced Rules

Avoid pieced rules, especially pieced column rules. The joints are sure to show and it is more difficult to handle the table. If their use cannot be avoided they should be arranged so as to "break joints," that is, a short piece of rule at the head of one column should alternate with a long piece of rule at the head of the next column.

All rules used should be new or nearly so and all corners joined perfectly. In tables that are to be electrotyped the finisher can touch up the corners with solder, but the careful compositor will make up his pages so carefully that this added labor and expense will not be necessary.

Some Specimen Tables

The four tables that follow have been selected for comment not because they are especially difficult but because each one presents some particular problem to the compositor, and because in each case he has contrived to get a good-looking result from the copy given him.

Table A

Make Ready Time. Hours.	Style of Press. Number of Forms.	Time of Presswork. Hours.	Rate per Hour when at Work.	Daily Performance. Impress.
....	CARD PRESS.	....	....	....
1	One Form of..7500 impressions	9	833	7500
4	Four Forms of 1000 "	6	666	4000
6	Eight Forms of 250 "	4	500	2000
....	SMALL MACHINE PRESS.	....	....	....
1	One Form of..6000 impressions	9	666	6000
5	Five Forms of 500 "	5	500	2500
8	Eight Forms of 100 "	2	400	800
....	HAND PRESS.	....	....	....
1	One Form of..1500 impressions	9	156	1500
4	Four Forms of 250 "	6	166	1000
....	MEDIUM CYLINDER.	....	....	....
1	One Form of..7500 impressions	9	833	7500
5	Five Forms of 750 "	5	750	3750
7	Eight Forms of 250 "	3	666	2000
....	DOUBLE MEDIUM CYLINDER.	....	....	....
2	One Form of..5000 impressions	8	666	5000
5	Three Forms of 1000 "	5	600	3000
7	Six Forms of.. 250 "	3	500	1500
....	MAMMOTH CYLINDER.	....	....	....
3	One Form of..4000 impressions	7	570	4000
5	Two Forms of 1250 "	5	500	2500
7	Four Forms of 250 "	3	333	1000

Table A is taken from a price list for printers, a valuable book written by Theodore L. De Vinne and set with the skill that characterized most of the work of this leader among printers.

In setting this table the compositor had two problems to meet; First to cast up his table to the proper width, second to cast it up to the proper length. Note that in casting up this table to the proper width instead of putting all the extra space in the stub of the table it is distributed through the figure columns, making them of a width to accommodate the box-headings, and making them of uniform width and even ems of 8-point for ease in composition. Having

made these preliminary calculations, the compositor is enabled to set his table with the correct leading to fill the page accurately and without the necessity of doing any of his work over again to make the table fit the page.

Table B

Italic capitals.	oz.	References.	lbs.	oz.	Small capitals.	oz.	Roman lower-case.	lbs.	oz.	Italic lower-case.	lbs.	oz.
A	18	*		7	A	18	a	37		*a*	5	
B	14	†		7	B	14	b	10		*b*	1	4
C	14	‡		7	C	14	c	17		*c*	2	6
D	14	‖		7	D	14	d	25		*d*	3	2
E	18	§		7	E	14	e	57		*e*	6	4
F	14	¶		7	F	14	f	11	4	*f*	1	14
G	14	☞		14	G	14	g	11	4	*g*	1	14
H	14	**Braces.**			H	14	h	32	8	*h*	4	6
I	10	⎧		4	I	10	i	25		*i*	3	2
J	7	⎨		4	J	7	j	1	14	*j*		7
K	7	⎩		4	K	7	k	3	12	*k*		10
L	14	**Dashes.**			L	14	l	12	8	*l*	1	14
M	14	2m	1	4	M	14	m	25		*m*	3	2
N	14	3m	1	4	N	14	n	37		*n*	5	
O	14	n		6	O	14	o	37		*o*	4	6
P	14	m	2	8	P	14	p	11	4	*p*	1	14
Q	7	2m	2	8	Q	7	q	4		*q*		10
R	14	3m	2	8	R	14	r	25		*r*	3	12
S	14	**Leaders.**			S	14	s	30		*s*	4	4
T	18	n	1	4	T	18	t	31		*t*	4	4
U	10	m	2	8	U	10	u	18	4	*u*	2	10
V	7	2m	5		V	7	v	7	8	*v*	1	4
W	14	3m	7	8	W	14	w	15	8	*w*	2	8
X	4	**Fractions.**			X	4	x	1	14	*x*		7
Y	10	¼		14	Y	10	y	11	4	*y*	1	14
Z	4	½		14	Z	4	z	1	14	*z*		7
Æ	4	¾		14	Æ	4	æ		10	*æ*		4
Œ	4	⅛		7	Œ	4	œ		10	*œ*		4
&	6	⅜		7	&	6	fi	3	12	*fi*		14
Italic Points.		⅝		7			ff	2	8	*ffi*		14
;	8	⅞		7			ffi	2	8	*ff*		14
:	8						fl	1	14	*fl*		10
!	4						ffl	1	14	*ffl*		10
?	4											
(	4											

Table B

From De Vinne's Practice of Typography, page 171

This table is difficult because it presents the problem of making a table of uniform appearance from lines that are irregular. The columns are made as nearly equal as possible, a uniform amount of white space is inserted between letters and rule in order to line the columns on each side, and the irregularity in the thickness of the letters is made less noticeable by introducing the justifying spaces between the letters and the leader in each column. One of the most difficult problems that the compositor has to solve is to set a table such as this and to line up the columns in such a way that the irregularities are not conspicuous.

Table C

From Logarithmic and Trigonometric Tables, page 96

This is an interesting example of a well planned table of logarithms. Note that the matter is arranged in three sections, each section separated by a double rule. Notice the cut of the type, an old-style figure with both ascending and descending tails to aid the eye in reading. The size of page here is arbitrarily determined by the figures themselves; there is but little chance to regulate the length by varying the white space between headings. The white space between rules and figures and between the lines themselves has been carefully balanced to give the whole page a uniform appearance. The columns of small 6-point figures are arranged to appear between the lines of 10-point figures opposite.

Having cast up the width of his columns in the regular way, the compositor's next problem is to adjust the length of his table to fill the page. The total length of the page in this case is 416 points. The compositor counts up his

Table C **23°**

′	log sin.	D. 1″	log tang.	D. 1″	log cotg.	D. 1″	log cos.	′
0	9.59 188		9.62 785		10.37 215		9.96 403	**60**
		0.50		0.58		0.10		
1	9.59 218		9.62 820		10.37 180		9.96 397	59
		0.48		0.58		0.08		
2	9.59 247		9.62 855		10.37 145		9.96 392	58
		0.50		0.58		0.08		
3	9.59 277		9.62 890		10.37 110		9.96 387	57
		0.50		0.60		0.10		
4	9.59 307		9.62 926		10.37 074		9.96 381	56
		0.48		0.58		0.08		
5	9.59 336		9.62 961		10.37 039		9.96 376	55
		0.50		0.58		0.10		
6	9.59 366		9.62 996		10.37 004		9.96 370	54
		0.50		0.58		0.08		
7	9.59 396		9.63 031		10.36 969		9.96 365	53
		0.48		0.58		0.08		
8	9.59 425		9.63 066		10.36 934		9.96 360	52
		0.50		0.58		0.10		
9	9.59 455		9.63 101		10.36 899		9.96 354	51
		0.48		0.57		0.08		
10	9.59 484		9.63 135		10.36 865		9.96 349	**50**
		0.50		0.58		0.10		
11	9.59 514		9.63 170		10.36 830		9.96 343	49
		0.48		0.58		0.08		
12	9.59 543		9.63 205		10.36 795		9.96 338	48
		0.50		0.58		0.08		
13	9.59 573		9.63 240		10.36 760		9.96 333	47
		0.48		0.58		0.10		
14	9.59 602		9.63 275		10.36 725		9.96 327	46
		0.50		0.58		0.08		
15	9.59 632		9.63 310		10.36 690		9.96 322	45
		0.48		0.58		0.10		
16	9.59 661		9.63 345		10.36 655		9.96 316	44
		0.48		0.57		0.08		
17	9.59 690		9.63 379		10.36 621		9.96 311	43
		0.50		0.58		0.10		
18	9.59 720		9.63 414		10.36 586		9.96 305	42
		0.48		0.58		0.08		
19	9.59 749		9.63 449		10.36 551		9.96 300	41
		0.48		0.58		0.10		
20	9.59 778		9.63 484		10.36 516		9.96 294	**40**
		0.50		0.58		0.08		
21	9.59 808		9.63 519		10.36 481		9.96 289	39
		0.48		0.57		0.08		
22	9.59 837		9.63 553		10.36 447		9.96 284	38
		0.48		0.58		0.10		
23	9.59 866		9.63 588		10.36 412		9.96 278	37
		0.48		0.58		0.08		
24	9.59 895		9.63 623		10.36 377		9.96 273	36
		0.48		0.57		0.10		
25	9.59 924		9.63 657		10.36 343		9.96 267	35
		0.50		0.58		0.08		
26	9.59 954		9.63 692		10.36 308		9.96 262	34
		0.48		0.57		0.10		
27	9.59 983		9.63 726		10.36 274		9.96 256	33
		0.48		0.58		0.08		
28	9.60 012		9.63 761		10.36 239		9.96 251	32
		0.48		0.58		0.10		
29	9.60 041		9.63 796		10.36 204		9.96 245	31
		0.48		0.57		0.08		
30	9.60 070		9.63 830		10.36 170		9.96 240	**30**
′	log cos.	D. 1″	log cotg.	D. 1″	log tang.	D. 1″	log sin.	′

66°

lines exclusive of headings and finds there are thirty-one. Each line will take up ten points in depth, or 310 points for all the lines. The box-headings, two of which are set in 8-point with 3-point lead at top and 2-point lead at bottom, and two in 6-point with 2-point lead at top and 3-point lead at bottom, will occupy 48 points more. The rules, each 2 points thick, will take 24 points more. 310 and 48 and 24 equal 382 points, leaving 34 points for spacing. A 2-point lead inserted between figures and short rules will require 28 points, leaving 6 points to be used for additional spacing where it will best improve the appearance of the table, as can be readily seen upon examination.

Table D

From Boston Almanac (1845), page 16

This is a difficult table to cast up, containing as it does a heading that requires careful adjustment, a box-heading, and what is really another table arranged across the bottom. In casting up this table the compositor proceeds as in other simpler tables, that is, he first calculates the total length of his page in points, then calculates the amount of space the body of the table will occupy.

This gives him the amount of space left for heading and table at the bottom of the page. In setting any tables, from the simplest to the most difficult, the compositor will not go far wrong if he will first calculate the space he has to fill and the number of lines he must set to fill it. The size of type that he can use may then be determined before a single type is actually set.

When this rule of careful calculation in advance is strictly followed tabular composition is simple, the table grows rapidly and accurately, and the work is completed with very little trouble

Table D **SEPTEMBER, 9th Month, begins on Monday.**

PHASES OF THE MOON.

Moon's Phases.	day.	hr.	min.	
New Moon,	1st	4	50	A.
First Quarter,	9th	0	40	M.
Full Moon,	15th	5	29	A.
Last Quarter,	23d	7	41	M.

☾ Perigee, 12th. Apogee, 24th.

D. Mo	Days of the Week	SUN Ris. & Sets.		Length of Days.	Sun's Dec. North.	Clock after Sun.	MOON Sets.	MOON Souths.	☾ Age.	☾ Pl.	High Water, BOSTON, Morn.	Eve.
No	Name	h. m.	h. m.	h. m.	° ′	m. s.	h. m.	h. m.	D.	S.	h. m.	h. m.
1	Mon	5 24	6 35	13 11	8 15	0 14	6 8a	11 44m	29.4	♍	11 22	11 38
2	Tue	5 26	6 33	13 7	7 53	0 33	6 36	0 29a	0.8	♍	11 56	——
3	Wed	5 27	6 32	13 5	7 31	0 52	7 5	1 14	1.8	♎	0 11	0 27
4	Thu	5 28	6 30	13 2	7 9	1 11	7 34	2 1	2.8	♎	0 43	0 59
5	Frid	5 29	6 28	12 59	6 47	1 31	8 8	2 50	3.8	♎	1 15	1 32
6	Sat	5 30	6 26	12 56	6 25	1 51	8 48	3 42	4.8	♏	1 51	2 6
7	S	5 31	6 25	12 54	6 2	2 11	9 33	4 37	5.8	♏	2 25	2 45
8	Mon	5 32	6 23	12 51	5 40	2 31	10 25	5 33	6.8	♐	3 4	3 26
9	Tue	5 33	6 21	12 48	5 17	2 52	11 25	6 32	7.8	♐	3 52	4 18
10	Wed	5 35	6 19	12 44	4 54	3 13	morn.	7 30	8.8	♑	4 49	5 27
11	Thu	5 36	6 17	12 41	4 32	3 34	0 30m	8 28	9.8	♑	6 12	6 57
12	Frid	5 37	6 15	12 38	4 9	3 54	1 41	9 24	10.8	♒	7 42	8 25
13	Sat	5 38	6 14	12 36	3 46	4 15	2 53	10 18	11.8	♒	9 3	9 34
14	S	5 39	6 12	12 33	3 23	4 36	rises.	11 11	12.8	♓	10 2	10 27
15	Mon	5 40	6 10	12 30	2 59	4 58	5 45a	morn.	13.8	♓	10 53	11 16
16	Tue	5 41	6 8	12 27	2 36	5 19	6 17	0 2m	14.8	♈	11 35	11 57
17	Wed	5 42	6 6	12 24	2 13	5 40	6 50	0 52	15.8	♈	——	0 16
18	Thu	5 43	6 5	12 22	1 50	6 1	7 25	1 42	16.8	♉	0 36	0 56
19	Frid	5 44	6 3	12 19	1 27	6 22	8 1	2 32	17.8	♉	1 14	1 33
20	Sat	5 45	6 1	12 16	1 3	6 43	8 42	3 22	18.8	♉	1 51	2 8
21	S	5 46	6 0	12 14	0 40	7 5	9 28	4 11	19.8	□	2 27	2 46
22	Mon	5 47	5 58	12 11	N 16	7 26	10 16	5 1	20.8	□	3 5	3 25
23	Tue	5 48	5 56	12 8	S 7	7 46	11 8	5 49	21.8	♊	3 47	4 10
24	Wed	5 50	5 55	12 5	0 30	8 7	morn.	6 37	22.8	♊	4 37	5 10
25	Thu	5 51	5 53	12 2	0 54	8 27	0 3m	7 23	23.8	♊	5 50	6 31
26	Frid	5 52	5 51	11 59	1 17	8 48	1 1	8 9	24.8	♋	7 13	7 52
27	Sat	5 53	5 49	11 56	1 41	9 8	1 58	8 54	25.8	♋	8 29	9 3
28	S	5 54	5 47	11 53	2 4	9 28	2 59	9 38	26.8	♍	9 31	9 52
29	Mon	5 55	5 46	11 51	2 27	9 47	4 0	10 23	27.8	♍	10 13	10 30
30	Tue	5 56	5 44	11 48	2 51	10 6	5 3	11 9	28.8	♍	10 50	11 6

SEPTEMBER, 1844.
Temperature, Weather, etc.

D	D	Temp	WEATHER, etc.
M	W	at 7 & 2	At 7 A. M. & 2 P. M.
1	S	64 67	Rainy. dull.
2	M	65 73	Cloudy. dull.
3	T	71 76	Rainy. clear.
4	W	60 78	Clear.
5	T	58 68	Clear.
6	F	54 68	Clear.
7	S	56 78	Clear.
8	S	58 79	Clear.
9	M	60 80	Clear.
10	T	68 78	Clear.
11	W	64 70	Clear.
12	T	64 70	Cloudy.
13	F	62 68	Cloudy.
14	S	60 72	Variable.
15	S	64 76	Clear.
16	M	62 80	Clear.
17	T	65 68	Variable.
18	W	56 72	Clear.
19	T	62 80	Clear.
20	F	64 84	Clear.
21	S	66 83	Variable.
22	S	64 60	Cloudy. rain.
23	M	48 62	Clear.
24	T	48 64	Clear.
25	W	58 64	Variable. rain.
26	T	52 54	Rain.
27	F	46 56	Variable.
28	S	39 53	Variable.
29	S	50 58	Rain storm. clear.
30	M	48 64	Variable.

Mean Temperature for Sept. 1844.
At 7 A.M. 58 1-2. At 2 P.M. 70.

SUPPLEMENTARY READING

The literature of this subject in any concrete form is very scanty. As usual with matters pertaining to composition De Vinne (Correct Composition. Oswald Publishing Co., New York) may be used to advantage.

Valuable suggestions may also be found in the Style Books of the best offices, such as the Oxford University Press (England), the University of Chicago Press, the Riverside Press (Cambridge, Mass.), the Lakeside Press (Chicago, Ill.), and the United States Government Printing Office.

QUESTIONS

1. Why does tabular work often lack uniformity?
2. What should a good tabular compositor know?
3. What special feature of tabular material demands great care, and why?
4. Of what does a typical table consist?
5. What is the first step in setting a table?
6. How is this usually done?
7. How was it done before the introduction of the point system?
8. Explain the method of casting up example I.
9. Explain the method of casting up example II.
10. How should the space given for the width of a table be divided?
11. How are the figures arranged in tables containing decimal points?
12. What substitute for the period is used, and why?
13. Explain the method of casting up example III.
14. What is the importance of headings?
15. What are the several headings of a table called?
16. What kinds of type are usually used for the several headings?
17. What is the general rule with regard to figure columns?
18. What may be done with a long heading over a narrow column?
19. How may a long and narrow table be handled?
20. How is the length of a table made up, and why?
21. How is the white space to be treated in an 8-point table?
22. How are tables usually placed?
23. How may large tables be treated?
24. How should the headings be arranged in wide or long tables?

25. What faces of type are best for tables, and why?
26. What determines the size of type for tables?
27. What choice is sometimes offered in setting a table?
28. What should determine the choice?
29. What size of type should be used in setting tables when the text type is 12, 11, 10, 8, or 6-point?
30. What is the usage with regard to leads in tables?
31. What device is used in machine set tables?
32. What must be done when leads are used in hand-set tables?
33. Where are leads always used in tables, and how?
34. What size of type should be used in main headings?
35. What size of type should be used in box-headings?
36. What size of type should be used in footnotes to tables?
37. Where should footnotes to tables be put?
38. How many faces of rule are needed for tables?
39. What would you want in the way of a supply of rules if you were to do a large amount of table work, and why?
40. What sizes of rule are best for tabular work, and why?
41. When are tables boxed in, and why?
42. What should be done to keep rules and type in good condition?
43. What is the usage with regard to column rules?
44. How may rules be inserted in machine tables?
45. What can be done to get a good corner?

NOTE. In using this text-book the instructor should set a variety of original problems of the several sorts illustrated by the examples.

The specimen tables on pages 14, 15, 17, and 19 should be carefully studied. If possible similar tables should be prepared in manuscript and the scholar required to set them. Price lists, mathematical books, and almanacs may be drawn upon for this material.

TYPOGRAPHIC TECHNICAL SERIES FOR APPRENTICES

THE following list of publications, comprising the TYPOGRAPHIC TECHNICAL SERIES FOR APPRENTICES, has been prepared under the supervision of the Committee on Education of the United Typothetae of America for use in trade classes, in course of printing instruction, and by individuals.

Each publication has been compiled by a competent author or group of authors, and carefully edited, the purpose being to provide the printers of the United States—employers, journeymen, and apprentices—with a comprehensive series of handy and inexpensive compendiums of reliable, up-to-date information upon the various branches and specialties of the printing craft, all arranged in orderly fashion for progressive study.

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   Relating to the mechanical features of printing types; their sizes, font schemes, etc., with a brief description of their manufacture. 44 pp.; illustrated; 74 review questions; glossary.

2. **Compositors' Tools and Materials** . . By A. A. Stewart
   A primer of information about composing sticks, galleys, leads, brass rules, cutting and mitering machines, etc. 47 pp.; illustrated; 50 review questions; glossary.

3. **Type Cases, Composing Room Furniture** By A. A. Stewart
   A primer of information about type cases, work stands, cabinets, case racks, galley racks, standing galleys, etc. 43 pp.; illustrated; 33 review questions; glossary.

4. **Imposing Tables and Lock-up Appliances** By A. A. Stewart
   Describing the tools and materials used in locking up forms for the press, including some modern utilities for special purposes. 59 pp.; illustrated; 70 review questions; glossary.

5. **Proof Presses** . . . . . By A. A. Stewart
   A primer of information about the customary methods and machines for taking printers' proofs. 40 pp.; illustrated; 41 review questions; glossary.

6. **Platen Printing Presses** . . . . By Daniel Baker
   A primer of information regarding the history and mechanical construction of platen printing presses, from the original hand press to the modern job press, to which is added a chapter on automatic presses of small size. 51 pp.; illustrated; 49 review questions; glossary.

7. **Cylinder Printing Presses** . . . By Herbert L. Baker
   Being a study of the mechanism and operation of the principal types of cylinder printing machines. 64 pp.; illustrated; 47 review questions; glossary.

8. **Mechanical Feeders and Folders** By William E. Spurrier
   The history and operation of modern feeding and folding machines; with hints on their care and adjustments. Illustrated; review questions; glossary.

9. **Power for Machinery in Printing Houses** By Carl F. Scott
   A treatise on the methods of applying power to printing presses and allied machinery with particular reference to electric drive. 53 pp.; illustrated; 69 review questions; glossary.

10. **Paper Cutting Machines** . . . . By Niel Gray, Jr.
    A primer of information about paper and card trimmers, hand-lever cutters, power cutters, and other automatic machines for cutting paper, 70 pp.; illustrated; 115 review questions; glossary.

11. **Printers' Rollers** . . . . . By A. A. Stewart
    A primer of information about the composition, manufacture, and care of inking rollers. 46 pp.; illustrated; 61 review questions; glossary.

12. **Printing Inks** . . . . . By Philip Ruxton
    Their composition, properties and manufacture (reprinted by permission from Circular No. 53, United States Bureau of Standards); together with some helpful suggestions about the everyday use of printing inks by Philip Ruxton. 80 pp.; 100 review questions; glossary.

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A primer of information about the materials and processes of manufacturing paper for printing and writing. 68 pp.; illustrated; 62 review questions; glossary.

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By Harris B. Hatch and A. A. Stewart
A primer of information about the processes of electrotyping and stereotyping. 94 pp.; illustrated; 129 review questions; glossaries.

PART II—*Hand and Machine Composition*

16. **Typesetting** . . . . . By A. A. Stewart
A handbook for beginners, giving information about justifying, spacing, correcting, and other matters relating to typesetting. Illustrated; review questions; glossary.

17. **Printers' Proofs** . . . . . By A. A. Stewart
The methods by which they are made, marked, and corrected, with observations on proofreading. Illustrated; review questions; glossary.

18. **First Steps in Job Composition** . . By Camille DeVéze
Suggestions for the apprentice compositor in setting his first jobs, especially about the important little things which go to make good display in typography. 63 pp.; examples; 55 review questions; glossary.

19. **General Job Composition** . . .
How the job compositor handles business stationery, programs and miscellaneous work. Illustrated; review questions; glossary.

20. **Book Composition** . . . . By J. W. Bothwell
Chapters from DeVinne's "Modern Methods of Book Composition," revised and arranged for this series of text-books by J. W. Bothwell of The DeVinne Press, New York. Part I: Composition of pages. Part II: Imposition of pages. 229 pp.; illustrated; 525 review questions; glossary.

21. **Tabular Composition** . . . . . By Robert Seaver
A study of the elementary forms of table composition, with examples of more difficult composition. 36 pp.; examples; 45 review questions.

22. **Applied Arithmetic** . . . . . By E. E. Sheldon
Elementary arithmetic applied to problems of the printing trade, calculation of materials, paper weights and sizes, with standard tables and rules for computation, each subject amplified with examples and exercises. 159 pp.

23. **Typecasting and Composing Machines** A. W. Finlay, Editor
Section I—The Linotype . . . . . By L. A. Hornstein
Section II—The Monotype . . . . . By Joseph Hays
Section III—The Intertype . . . . . By Henry W. Cozzens
Section IV—Other Typecasting and Typesetting Machines
By Frank H. Smith
A brief history of typesetting machines, with descriptions of their mechanical principles and operations. Illustrated; review questions; glossary.

PART III—*Imposition and Stonework*

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Things the apprentice should know about locking up small forms, and about general work on the stone. Illustrated; review questions; glossary.

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Pamphlet and catalog imposition; margins; fold marks, etc. Methods of handling type forms and electrotype forms. Illustrated; review questions; glossary.

PART IV—*Presswork*

26. **Making Ready on Platen Presses** . By T. G. McGrew
The essential parts of a press and their functions; distinctive features of commonly used machines. Preparing the tympan, regulating the impression, underlaying and overlaying, setting gauges, and other details explained. Illustrated; review questions; glossary.

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Preparing the press; adjustment of bed and cylinder, form rollers, ink fountain, grippers and delivery systems. Underlaying and overlaying; modern overlay methods. Illustrated; review questions; glossary.

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Describing some practical methods of pressroom work, with directions and useful information relating to a variety of printing-press problems. 87 pp.; 176 review questions.

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A primer of information about the distinctive features of the relief, the intaglio, and the planographic processes of printing. 84 pp.; illustrated; 100 review questions; glossary.

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A primer of information about words, their relations, and their uses. 68 pp.; 84 review questions; glossary.

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A primer of information about the marks of punctuation and their use, both grammatically and typographically. 56 pp.; 59 review questions; glossary.

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A primer of information about capitalization, with some practical typographic hints as to the use of capitals. 48 pp.; 92 review questions; glossary.

35. Division of Words . . . . . By F. W. Hamilton
Rules for the division of words at the ends of lines, with remarks on spelling, syllabication and pronunciation. 42 pp.; 70 review questions.

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A study of the principles of compounding, the components of compounds, and the use of the hyphen. 34 pp.; 62 review questions.

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A primer of information about abbreviations and signs, with classified lists of those in most common use. 58 pp.; 32 review questions.

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The technical phases of the proofreader's work; reading, marking, revising, etc.; methods of handling proofs and copy. Illustrated by examples. 59 pp.; 69 review questions; glossary.

40. Preparation of Printers' Copy . . By F. W. Hamilton
Suggestions for authors, editors, and all who are engaged in preparing copy for the composing room. 36 pp.; 67 review questions.

41. Printers' Manual of Style . . .
A reference compilation of approved rules, usages, and suggestions relating to uniformity in punctuation, capitalization, abbreviations, numerals, and kindred features of composition.

42. The Printer's Dictionary . . . . By A. A. Stewart
A handbook of definitions and miscellaneous information about various processes of printing, alphabetically arranged. Technical terms explained. Illustrated.

PART VII—*Design, Color, and Lettering*

43. Applied Design for Printers . . . By Harry L. Gage
A handbook of the principles of arrangement, with brief comment on the periods of design which have most influenced printing. Treats of harmony, balance, proportion, and rhythm; motion; symmetry and variety; ornament, esthetic and symbolic. 37 illustrations; 46 review questions; glossary; bibliography.

44. Elements of Typographic Design . . By Harry L. Gage
Applications of the principles of decorative design. Building material of typography paper, types, ink, decorations and illustrations. Handling of shapes. Design of complete book, treating each part. Design of commercial forms and single units. Illustrations; review questions. glossary; bibliography.

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A primer of information about the beginnings of printing, the development of the book, the development of printers' materials, and the work of the great pioneers. 63 pp.; 55 review questions.

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