OPERATOR'S
MANUAL

for Differential Spacing Models

610 & 610 F (with forms ruling attachment)
Principle Features of the DSJ Vari Typer

CHANGEABLE TYPE

Types are easily inserted into the DSJ Vari-Typer. The machine will hold two fonts at one time and, with a simple twist of the wrist, the operator can switch from one style to the other. Additional styles can be inserted in a matter of seconds.

UNIFORM IMPRESSION

The DSJ Vari-Typer has an electrically controlled hammer which presses the paper, ribbon, and type together, producing a printed impression on the paper. The hammer is mechanically actuated each time the operator presses a letter key, but, because the hammer stroke is electrically controlled, the impression of the type on the master sheet is completely uniform—an important factor in producing master copies for reproduction. The hammer action and its electrical control are described in further detail on page 45 under “Care of the Vari-Typer.”

DIFFERENTIAL SPACING

The DSJ Vari-Typer automatically spaces characters of the alphabet to their individual widths. Wide characters like “w” or “u” are set at wide spacings; an average letter such as “a” is given an average space; narrow letters like “i” or “l” are spaced more closely. This variation produces a true printed effect in the copy.

JUSTIFIED MARGINS

Even right-hand margins can be produced on the DSJ Vari-Typer. This process, called “justifying” or “justification,” is achieved automatically. The resulting copy has the same neat, blocked appearance of that found in books, magazines, and newspapers.
DSJF Model

Keyboard

The DSJ keyboard consists of 30 keys (3 rows of 10 each) with two shift keys to provide a total of 90 different characters. The figure shift produces the numbers and other special characters shown at the top of the keys. The capital shift is used to obtain capitals or the symbols shown in the middle of certain keys. A touch typist will find the DSJ keyboard easy to learn, for the letter arrangements are the same as the standard typewriter.
Inserting the Type Font

Vari-Typer type font showing web and eyelet nub. Eyelet nub protrusion is found on only one side of web.

Depress type change key. This will elevate and lock anvil for type insertion.

Hold type between thumb and forefinger with web out and eyelet nub down when inserting in anvil.

Insert type so that eyelet enters wide slot at dot marking. (Center line of type lines up with dot on the anvil.)

Slide the type font to the left until center line of the type is exactly aligned with the center line of the anvil.

Release type change key by pushing lock lever back.

Lift and turn anvil knob as far as it will go and release gently. When anvil locating pin appears on left side, font is in printing position.

The anvil will hold two types at one time—one in active typing position, the other in reserve position. To change from one to the other, lift anvil knob and turn as far as it will go. Do not use type change key.

Note: Use type change key to insert type, remove type, or align types (with anvil center line). Use anvil knob to switch types already in machine.
The Ribbon and Ribbon Shield

Pull carriage all the way to the right. Remove front cover by lifting up and towards you. The ribbon cup is located on left side of machine in vertical position and is removed by grasping its top end and lifting with a slight rotating motion.

Hold shield with pointer up and the two ribbon slots facing you. Thread ribbon through guide. Then, holding ribbon with carbon side away from you, thread it through the ribbon slots.

Turn the cup so that the spindle on which the ribbon turns is up. Place ribbon spool in cup, so that it turns counterclockwise.

Replace shield by dropping each loop on holder prongs. Press right prong to the left when replacing shield. Pull ribbon through guide on right side until it reaches two small feeder wheels. Push back the smaller wheel and slip ribbon between wheels. Tap any key on keyboard several times to see if ribbon is moving. (Ribbon will not move when you press space bar or when non-print key is set for non-print).

Replace ribbon cup. Make certain cup is down in machine as far as it will go. Cup is in proper operating position when ribbon pulls freely.

To remove ribbon shield from holder, press right prong of holder to left. Grasp shield and lift it off holder prongs.

On the right side of the machine, near the carriage, is a ribbon control knob which actuates the ribbon feed wheels. Whenever you wish to feed a small amount of ribbon through the machine, turn the control knob toward you.

Note: There are many ways to remove the shield from its holder – reaching behind paper table and starting shield up with your fingertips, using a pair of tweezers to grasp the shield, or using a hook (made from a straightened paper clip) in one of the shield rivet holes.
The feed roll lever is located at right end of the carriage. When pressed back, it separates the feed rolls to permit insertion of paper or masters.

**Paper Insertion - Method I.** Roll the paper into a cylindrical shape, allowing about two inches to extend at top for easy handling. Open feed rolls and insert paper into machine at right end of the carriage. Hold top of paper and guide the cylinder of paper into center of carriage. Straighten paper and close feed rolls. If paper is not quite straight, press feed roll lever lightly, just enough to barely separate feed rolls and allow movement of paper.

**Plate Insertion - Method I.** Pull out hook clamps at each end of split wooden roller. Open split sections of roller and place bottom edge of plate in center of open roller. Close the roller and push in the hook clamps at each end.

Roll the plate around the roller tightly and evenly. Allow two or three inches to extend at top. Hold the top of the plate with left hand and guide plate into feed rolls. Press each edge of plate against left alignment guide. The printed numbers along the side edges of the plate should line up in same manner on both left and right sides. Straighten the plate and close the feed rolls.

**Plate Insertion - Method II.** Place split roller in the paper basket with open jaws of roller up. Drop plate between feed rolls so that lower end of plate rests in open jaws of the roller. Lock end clamps, close feed rolls, and roll plate down in machine, turning split roller (away from you) to take up all slack in the plate.

**Paper Insertion - Method II.** Open feed rolls and drop paper into the center of carriage. Close feed rolls, disengage the linomatic feed lever, and roll paper down, using feed roll knob. This method is recommended for short sheets of paper (8" or shorter), for cards, and for envelopes.

**Stencil Insertion.** Remove the backing sheet. Place the coated face of the cushion sheet against the back of the stencil. Attach with paper clips. Roll the stencil into a small cylindrical shape, allowing two or three inches to extend at top. Holding the top of the stencil with left hand, guide the stencil into the feed rolls. Use split roller when inserting the stencil lengthwise in the carriage.

*Note: The split roller is used to control the master copy—whether it be paper, a plate, a stencil, or a tracing. It must be used with plates. When rolling the plate down in the machine, always turn the split roller away from you—to take up slack in the plate and to prevent the plate from creasing.*
Basic Settings

TYPE NUMBER

680-10B

Style No.  
Point Size  
Horizontal Spacing

Each Vari-Typer type font has an identifying number which appears along the center line of the font. (Forms or segment fonts have a metal strip in the center which partially obscures the number, but in such cases the number is scribed on the back of the type.) The type number consists of three parts. The first three digits are the style number; the second part of the number (following the dash) is the point size; the letter denotes the horizontal spacing.

A type family (or series) contains several sizes of the same style. The family may also have a series of matching italics and a series of large and small caps. The style number of the basic series ends in "0" (e.g. 680 series); the italic series, in "5" (e.g. 685 series); and the large and small cap group, in "L" (e.g. 681 series). Notice, however, that the first two digits are the same for the entire family of type.

STANDARD-DIFFERENTIAL SETTING

Both standard and differential spacing types can be used on the DSJ Vari-Typer. On standard types, however, each letter takes the same amount of space regardless of its width. On the right side of the machine is the Standard-Differential lever. Pull this lever out (to the right) when using standard types, and the machine will space all letters equally. Push the lever in (to the left) when using differential types, and the machine will space each character according to its design width.

Standard types can be identified by their style number. All types with style numbers below 600 are standard types. A style number of 600 or above is a differential type.

HORIZONTAL SPACING

On the right side of the DSJ is the horizontal spacing lever which may be set in any of four different slots. Each slot is marked both with a letter and a number. The numbers (13, 14, 16, and 18) refer to the number of characters per inch obtained when the machine is set at standard spacing. For example, a large heading type needs more room than a small footnote type would require, so the machine should be set at the widest horizontal spacing—13 characters per inch. The letters (A, B, C, and D) on the slots denote horizontal settings for differential types. Differential types are marked for the proper horizontal spacing with a letter (A, B, C, or D). Simply place the spacing lever in the slot that corresponds to the letter on the type.
Basic Settings

Measuring Type in Point Sizes

VERTICAL SPACING
POINT MEASUREMENTS

DSJ type sizes are measured in points, the accepted basis for all type measurement. The point is actually a unit of measurement for both horizontal and vertical dimensions, but when used to describe type size, it applies only to the vertical dimension of type—from the cap line to descender line. The diagram at the left illustrates how two type styles that appear to be different in size are actually the same point size.

The value of a point is a decimal measurement closely equivalent to 1/72 of an inch; or, in other words, there are 72 points in one inch. Thus, a 12-point type occupies 1/6 of an inch of vertical space.

LEADING

The vertical line spacing used with a type depends on the type size and the amount of leading desired. Leading is simply extra space added between lines. For example, if a 10 point type is being used and 2 points of leading are desired, the vertical spacing per line would be 12 points. If no leading is used, the vertical spacing per line would be 10 points, and the copy is described as set solid. Below are samples of the same paragraph composed with different amounts of leading:

No Leading (Set Solid)
The honor of being the first inventor of movable types probably belongs to a Chinese blacksmith named Pi Shing, who lived about A.D. 1000, and printed books with them nearly 500 years before the age of Gutenberg.

One Point Leading
The honor of being the first inventor of movable types probably belongs to a Chinese blacksmith named Pi Shing, who lived about A.D. 1000, and printed books with them nearly 500 years before the age of Gutenberg.

Two Point Leading
The honor of being the first inventor of movable types probably belongs to a Chinese blacksmith named Pi Shing, who lived about A.D. 1000, and printed books with them nearly 500 years before the age of Gutenberg.

LINOMATIC FEED LEVER

The linomatic feed lever can be set for any vertical spacing from 0 to 15 points, at half-point intervals. Pull out linomatic dial indicator and move to desired position. Groove on indicator denotes setting. A 10-point type (e.g. 680-10) may be set solid (10 on 10), leaded 1 point (10 on 11), leaded 2 points (10 on 12), etc. Simply add the size of type to desired amount of leading and set the indicator on the linomatic dial.

Directly below the linomatic feed lever is a line feed control lever which controls the direction of the paper feed. Set the control lever to the left to feed paper up in machine. Set control lever to the right to feed paper down in machine.

Push the left feed roll knob in (toward the carriage) and turn it counterclockwise (toward you). This engages the linomatic feed. To disengage the linomatic feed, push the left feed roll knob in and turn knob clockwise (away from you) and release. Try engaging and disengaging knob several times.
Basic Settings

VARI-LINE GEAR

At the right end of the carriage is a gear that will move the paper 4 points vertically each time the gear is turned one “click” (or notch). Behind the gear is a detent lever. Push this lever down (so it swings freely) to engage the gear. Push the lever straight back to disengage the gear. When the VARI-LINE gear is engaged, it will produce spacings of 4 point, 8 point, 12 point, etc., depending on the number of “clicks” used per line. If desired, a two-point gear may be substituted for the four-point gear. Simply unscrew right knob, slip four-point gear off shaft and insert two-point gear. This will provide any vertical spacing of two-point multiples (i.e. 2, 4, 6, 8, 10 points, etc.)

Important: Never have Vari-Line gear and linomatic feed (left feed roll knob) engaged at same time.

There are many other Vari-Line gears available, designed primarily for use on models that have no linomatic feed lever. See page 30 for a list of available Vari-Line gears.

IMPRESSION

The uniform impression of the DSJ Vari-Typer is a result of the electrically controlled hammer stroke. The force of the hammer stroke can be varied by setting the impression lever (on left side of machine). These impression settings range from 1 to 7 (the heaviest impression). The proper impression setting varies according to the type style and size. Large, bold types require a heavy impression (7), whereas a small, sharp type would need a light impression (1 or 2). The setting also varies according to the duplicating master used (e.g. heavier impressions are required on stencils; lighter impressions, on paper and direct plates). Use the lightest impression that will give complete carbon coverage on each character.

The following table can be used as a general guide for setting impression:

- A spacing — 6 or 7 impression
- B spacing — 4 or 5 impression
- C spacing — 3 or 4 impression
- D spacing — 1 or 2 impression

REPEAT KEY

Large heading types and extra bold faces may be too light even when typed at the heaviest impression setting. The repeat key is designed to provide darker copy. Hold the repeat key and strike the letter key several times. Do this for each character in the copy. (Types that require repeats are used only for headings, subheadings, or emphasis—never for text matter.)
The ordinary space taken by typewriters or standard Varitypers has, for the purpose of differential operation, been divided into thirds or increments on the DSJ. Thus, an increment is 1/3 of an average space.

All characters on the DSJ keyboard have a certain increment value—either 2, 3, or 4 increments depending on its design width. The value of these characters are listed in chart form at the bottom of this page.

Following are some general rules dealing with the increment value of the various keyboard characters. These rules will help you in getting to know the value of the letters and other symbols:

1. An average space is 3 increments.
2. An average letter takes 3 increments. All other letters and symbols are below or above average.
3. Lower case letters take 3 increments.
   Exceptions:
   1-l-f-t-r take 2 increments. Together, these letters spell a phrase, "lift jr." (lift junior).
   w-m take 4 increments. Together these letters form an abbreviation for William. Put the phrases together and you have "lift jr., wm."
4. Capital letters take 4 increments.
   Exceptions: I (2 increments)
   J S (3 increments)
5. Other keyboard characters:
   a. Small punctuation symbols like the comma, period, etc. take 2 increments.
   b. All numerals and average symbols take 3 increments.
   c. Fractions, percentage, ampersand (&), and the long dash (−) take 4 increments.
6. The space bar takes
   2 increments (at differential setting)
   3 increments (at standard setting).
7. The 1/3 spacer takes one increment forward; the 1/3 back spacer takes one increment backward; the 3/3 back spacer, three increments backward.
8. When machine is set at Standard, everything takes 3 increments.
   Exception: 1/3 spacer and 1/3 back space.

<table>
<thead>
<tr>
<th>2 Increments</th>
<th>3 Increments</th>
<th>4 Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>lift jr</td>
<td>q a z s x e d c v</td>
<td>w m</td>
</tr>
<tr>
<td>, ; - !</td>
<td>g b y h n u k o p</td>
<td></td>
</tr>
<tr>
<td>: ' ( )</td>
<td>f l f f f l</td>
<td>(All capital letters except I J S)</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8 9 0</td>
<td>- &amp; % ¼ ½ ¾</td>
</tr>
<tr>
<td></td>
<td>$ ç ? * /</td>
<td></td>
</tr>
</tbody>
</table>
Straight Typing

HORIZONTAL ALIGNMENT

LEFT MARGINAL STOP

Note position of left edge of paper and set left marginal stop to allow for desired left margin. For example, if edge of paper is at 3, set marginal stop at 4 for a one-inch left margin. Use either the top alignment scale to determine position of page edge or look at position of paper in paper basket in relation to marginal scale.

MARGIN INDICATOR

The carriage movement of the DSJ is in small units (or increments) of space. If the carriage is banked against the left marginal stop, the starting point of the copy will not always be the same on each line, because no one banks the carriage exactly the same way each time.

An exact starting position and, consequently, an even left margin may be obtained by using the margin indicator dial, located on the front of the machine. The pointer on this dial moves automatically during the typing operation, reflecting the movement of the carriage. The pointer may also be moved by hand to any desired position.

On the first line of copy:

1. Bank the carriage against the left stop.
2. Press 1/3 spacer key twice.
3. Move marginal pointer clockwise to line at top of the marginal dial. This is the STARTING POINT of the copy.

On succeeding lines:

1. Bank carriage.
2. Press 1/3 spacer whatever number of times necessary to bring pointer to line at top of dial (starting point).

NON-PRINT KEY

The non-print key at the right end of the keyboard is a valuable device when making corrections on copy. If you have completed a line and discover an error in the copy, erase the error, return to the beginning of the line, push the non-print key back, and retype over the copy until you reach the position for the correction. (Since the non-print key is in non-print position, the copy will not be affected.) Pull the non-print key forward in print position and type the correction.

SAMPLE EXERCISE

1. Copy with words omitted:

Because of the sensitivity of camera film, erasures are not made on typewritten copy reproduction. As the stenographer types her lines of copy on the final reproduction proof, she ignores the errors she has made.

2. Same copy with words inserted by using non-print key:

Because of the sensitivity of camera and film, erasures are not made on typewritten copy for reproduction. As the stenographer types her lines of copy on the final reproduction proof, she ignores the errors she has made.

Note: The non-print key has many uses (e.g. centering headings; this exercise will provide practice in the operation of this key.)
VERTICAL ALIGNMENT

Alignment Guides

At each side of the anvil is a solid metal strip. These strips are called alignment guides and are used to locate the vertical position of each line of copy. The line being typed at any given time appears just above the alignment guide. To test the alignment guide of your machine, type a few "x's" or "m's" and move the carriage to the left. Press the paper against the left alignment guide and see how the letters appear in relation to the guide. Usually the base of the letters will rest exactly on the guide. When returning to a previously typed line of copy (after several intervening lines or after inserting paper back in machine for a correction or addition), use the alignment guide to determine correct vertical position. Always press paper against alignment guide to get a true relationship between guide and copy. Never use ribbon shield as a device for judging vertical position.

Practice exercise: Type a few lines of copy, using the linomatic feed lever. Disengage linomatic lever and locate correct vertical position of first line of copy. Type the first character of the line in the margin. If test letter is too high or too low, adjust the vertical position accordingly and type another test letter. (In actual composition these test letters can be removed by erasing or covering with correction fluid, depending on the master being used.) When correct position is located, retype first line. Letters should fall in same vertical position as original line.

SAMPLE EXERCISE

The usual first step of the layout man in planning a job of printing is to make small or thumbnail sketches. He selects the best of these in his opinion or in the opinion of others, and makes a rough layout.

KEY ACTION

1st PHASE (TYPE POSITIONED)

2nd PHASE (HAMMER STRIKES)

TOUCH

The Vari-Typer touch is a positive pressure touch. Each key must be pressed all the way to the bottom on each stroke. Each time a key is pressed two operations are performed. The first phase of the depression positions the type, and the second phase trips the hammer causing it to strike the type. Typing speed can be easily achieved with practice, after learning the basic touch. Concentrate on typing with an even, rhythmical touch, and be careful to bottom each key. It will help considerably if you learn to think each character as you type. Steady pressure on each key, rather than a staccato striking of the keys is the simple secret.
**Parts Used in Justification**

**TABULATOR STOPS**

Tabulator stops are located at the rear of the carriage on a scale that corresponds with the marginal scale. To remove a tabulator stop, place your index finger under the stop and pull it straight out from scale. To insert stop, hook **closed end** of stop over scale, squeeze open prongs together slightly, and push stop into desired position. The right prong of stop (looking toward the back of machine) should be on desired number.

A tabulator stop determines the starting position of justified copy. It should be placed at “6½” on the tabulator scale to allow the minimum amount of carriage movement between the rough and justified copy and the maximum column width on a standard size sheet of paper.

**MARGINAL STOPS**

On the lower part of the carriage, directly in front of the paper basket, is the marginal scale, which is divided into inches and **twelfths** of an inch (to conform with printer’s measurements).

When the machine is set for justification, the left and right marginal stops determine the beginning and end positions of the **rough copy** and, hence, the width of column to be justified. The right stop is **removable** (i.e. it can be removed from the marginal scale). It is **always** placed at “6” on the marginal scale. Hook the lower part of stop under the marginal scale; then squeeze the top prongs together slightly to allow stop to hook over top edge of scale. Press top prongs together and slide stop along scale until indicator of stop rests on “6.” Subtract the desired column width from “6” and move left stop to resulting position.

**MARGIN DIAL**

The main function of the margin dial is to **keep the left margin of copy even**. When justifying copy, **two** exact starting points are necessary—one for the **rough copy** and another for the **justified copy**. The starting point of the rough copy is established by moving the marginal pointer manually to the mark at top of dial. The second starting point (for justified copy) is obtained by moving the **outer rim** of the marginal dial until **rim marker** matches the position of the pointer.

**JUSTIFIER DIAL**

The justifier dial serves two purposes. It indicates how much typing space is left as carriage nears the end of each rough copy line, and it also shows when machine has reached the “justifying area.” The dial has four scales (A, B, C, and D) to correspond with the horizontal spacings on the machine. As rough copy is typed and the carriage approaches the end of a line, a bell rings, and the justifier light, above the dial, lights up. As typing continues, the justifier pointer moves up on the dial. The **rough copy line must end with pointer somewhere on the scale.** Then the line will justify when repeated on the right side of the paper.

**ACTUATING BAR LOCK**

The actuating bar lock is located at right end of carriage behind the carriage release lever. It is a slide lock that can be released by pushing the slide lever to the **right**. The actuating bar lock **must be released when justifying copy**. To lock the actuating bar, bank the carriage against the left marginal stop and push the slide lever to the left. The actuating bar should always be locked when using forms ruling attachment or when the tabulator key is used for tabular copy.
The detailed steps for setting the justifier are listed below. Learn to follow these steps in the proper order, and they soon will become automatic.

1. Insert type and set proper horizontal spacing, vertical spacing, and impression.

2. Set marginal stops the desired width apart.
   Place right stop at 6. Subtract column width from 6 and set left stop at this position.
   Example: For a 2” column, set left stop at 4; right stop at 6.

3. Move carriage to the right:
   Do not use carriage release lever. Simply pull carriage to right with a firm, even pull. This will bank carriage against left stop.

4. Insert paper.
   Bring alignment (forms planning) scale down over the paper. Note where copy will be positioned on paper. For a 2” column, rough copy will begin at “4” on scale and extend to “6.” Justified copy will start at “6½” and extend two inches to “8½.” Be sure that all of these copy positions will fall on paper. Copy need not be centered, because rough copy will be cut off and discarded.

5. Press 1/3 spacer twice.
   This is necessary to give carriage some “play” against left stop and to start carriage in forward direction.

6. Move marginal pointer in clockwise direction until pointer lines up with mark at top of dial.

7. Type a line of copy until justifier pointer moves up on justifier dial. Just before justifier pointer starts to move on dial, a bell will ring (and justifier light will light up) as warnings to watch the justifier dial.

8. Do not space after last word typed or extend any lines beyond zero (last mark) on justifier dial.

9. Press tabulator key.


11. Move outer rim of marginal dial until outer rim marker lines up with marginal pointer.

12. Repeat line of copy just typed on left side of paper.

The justifier is now set. On each succeeding line, always line up marginal pointer with mark at top of dial before typing rough copy and with outer rim marker before typing the justified copy. Do this by pressing the 1/3 spacer. Do not disturb the justifier settings by moving marginal pointer manually.

When banking carriage to type rough copy, always pull carriage firmly enough to allow marginal pointer to fall left of the top mark. If pointer falls on mark or right of it, move carriage slightly to the left and rebank. Then press 1/3 spacer whatever number of times is necessary to bring pointer to top mark. This may vary from line to line depending on the manner in which the carriage is banked. As long as copy starts at the two designated starting positions for rough and for justified copy, the left margin will stay even and copy will justify.
Justifying Hints

SPACE BAR
The space bar controls justification, because the necessary spread for justification takes place between words. Consequently, there are some important rules in using the space bar:

- Always bottom the space bar as you do a key of the keyboard.
- Always press space bar near center of bar—not at either end.
- Do not use space bar to indent paragraphs or for any reason except for space between words.
- Do not space after last word typed on rough copy line.

Remember this rule when justifying:

\[
\text{The number of increments on rough copy PLUS the number of space bar strokes} \quad \text{MUST EQUAL} \quad \text{The number of increments on justified copy PLUS the number of space bar strokes}
\]

PARAGRAPH INDENTATIONS
The amount of paragraph indentation used in copy should be proportionate to the column width. For a 3” column 3 average spaces should be used; for a 4” width, four average spaces, etc. An average space is 3 increments, so a total of 9 increments would be used for a 3” column. There are two ways to indent a paragraph:

- On rough copy type 1 “n” for each space of indentation; on justified side type same number of “n’s” using non-print key.
- Count out number of increments of indentation using 1/3 spacer.

PARAGRAPH ENDINGS
On a short line that does not extend into “justifying area” (such as a paragraph ending):

- Do not press tabulator key. Simply move carriage, using carriage release lever, to starting position of justified copy.

TYPOGRAPHICAL ERRORS
Strive to type accurate rough copy so that it will be easier to type correct justified copy. If errors do occur in the rough copy, they may be eliminated in the following manner:

- If letters are transposed, they may be corrected on justified copy without retyping rough copy line.
- If incorrect letter has been typed, compare the error with correct letter. If they have same increment value, simply correct copy on justified side. If correct letter has higher increment value, add the necessary number of increments with the 1/3 spacer, before tabulating. If correct letter has lower increment value, subtract the necessary number of increments with 1/3 back spacer, before tabulating.
- If error is not noticed until after tabulating, copy can be corrected by adding or subtracting increments between words—or carriage can be banked and rough copy retyped.
- Learn to check rough copy line before tabulating.
- If space bar is struck twice near beginning of rough copy, simply eliminate space stroke between next two words.
- If space bar is struck after last word on rough copy line, bank carriage and retype rough copy line. Do not move paper up in machine. Type right over previously typed copy.
- If space bar is struck twice between words on justified copy, rebank carriage, retype rough copy line, and use non-print key to reach correct position on justified copy.
Justifying Hints

Typing Beyond Zero on Justifier Dial

If a line of copy extends beyond zero (last mark) on justifier dial, there are two methods of justifying the line:

Method One:
1. Using 1/3 spacer back, return justifier pointer to zero, counting the number of increments necessary to reach zero. This is the number of increments over zero.*

2. On justified copy, remove 1 increment between words for each increment rough copy line extended beyond zero. Select best places to remove increments, such as before or after slanting letters (like y, w, etc.) or after commas or similar punctuation marks.

Method Two:
1. Using 1/3 back spacer, return justifier pointer to zero, counting the number of increments necessary to reach zero. This is the number of increments over zero.* Example: 3 inc.

2. Count the spaces (between words) on rough copy line. Example: 7 word spaces (8 words on line)

3. Subtract the number of increments beyond zero from the number of word spaces on line. Example: 7 – 3 = 4 This is the dial pointer setting.

4. Using 1/3 back spacer, return justifier pointer to dial pointer setting figured in Step 3.

5. Tabulate, press 1/3 between words on justified copy, press space bar, and 1/3 back spacer at each word space throughout justified line. This will eliminate extra increments and space justified line evenly.

* There are mechanical limits as to how far you can type beyond zero. These limits vary according to spacing being used:

A spacing – 3 increments
B spacing – 4 increments
C spacing – 4 increments
D spacing – 5 increments

If you type beyond the mechanical limits, the carriage will lock against right marginal stop, and you may be unable to third-space back to zero. However, it is possible to justify lines beyond the mechanical limits by stopping short of zero and figuring the number of increments line would extend if word were completed. The actual limit as to how far a line can extend beyond zero (and still be justified), is the number of word spaces on the rough copy line. In the example above the actual limit would be 7.

Dial Adjuster Knob

At left end of paper basket is a knob that can be used to adjust justifier dial pointer so that it is easy to read. After marginal stops are set for justification, space across page until justifier pointer reaches zero. Back space one increment and see if pointer rests exactly on the “I” mark. If it does not, move the adjuster knob at end of carriage slightly until pointer does rest exactly on mark. Always check this adjustment when changing from one horizontal spacing to another.

Sample of Rough and Justified Copy

This is a sample of copy composed on the DSJ Vari-Typer. This is an example of uneven lines composed on the left side of the page and converted into even, justified lines on the right hand side.

This is a sample of copy composed on the DSJ Vari-Typer. This is an example of uneven lines composed on the left side of the page and converted into even, justified lines on the right hand side.
The DSJ Scale

The DSJ Scale serves several purposes. It can be used to:
- Measure the width of illustrations (for "run-arounds" or indentations).
- Measure the number of increments in a Vari-Typed word or phrase.
- Determine the spacing used on a Vari-Typed sample of copy.
- Determine marginal stop settings for justification.
- Obtain a precise or exact justified column width.

The scale consists of three parts:

1. **Top Scale**
   This scale is marked in inches and sixteenths of an inch, corresponding with the markings of an ordinary ruler.

2. **Middle Scales**
   The four center scales are increment scales, one for each of the four horizontal spacings—A, B, C, and D. Each division on these scales is equal to two increments.

3. **Bottom Scale**
   The bottom scale is a pica scale. The pica is a printing measurement equal to 12 points. Since there are 72 points in 1 inch, there are 6 picas in 1 inch.

   Each long mark on the pica scale equals 1 pica. Each short mark equals 1/2 pica. Each small division on the scale is equal to each division on the marginal scale, the alignment scale, and the tabulator scale. In other words, it takes two of these divisions to equal 1 pica.

**READING THE DSJ SCALE**

The increment portions of the DSJ Scale are designed to tell you exactly how many increments you should have in any given column width. In order to read the scale it is necessary to draw a sharp, vertical line on a sheet of paper and then lay the scale over the line (at right angles to it). It is also important that the scale be straight, for if it is tilted at an angle, you will get an incorrect reading.

Below is a sample reading of the scale. The top of the scale is lined up with the 3" mark; the bottom is lined up with the 18 pica mark. Now it is possible to read the position of the pencil line on the increment scales.

![DSJ Scale Diagram]

In the above illustration, a 3" width at "A" spacing would be 117 increments at "B" spacing would be 128 increments at "C" spacing would be 142 increments at "D" spacing would be 158 increments

Try several practice readings on the scale for various column widths, e.g. 4", 2½", 3½". Also try some pica column widths, such as 20 pica, 17 pica, 14 pica, etc.
EXACT COLUMN WIDTHS

One of the most important purposes of the DSJ Scale is to obtain an exact justified column width. This is necessary for several reasons. The copy may be galley columns for a newspaper or magazine. A slight variation in the column width of the galley copy could cause as much as a 1/2” of variation in the over-all page width. Or it may be necessary to compose corrections of two or three lines, or even a paragraph. If the justifier settings have been changed, merely setting the stops at the same position and resetting machine will not necessarily produce the same column width. The explanation for this is that the column width is determined by the way the operator banks the carriage on the first line, and this will often vary from setting to setting. In addition, there are times when several Vari-Typers are used to compose the same job. Only by setting their machine for an exact column width (in terms of increments) will the copy match.

It takes only a few minutes to set machine for an exact and precise column width.

Justifier Steps For Exact Width:

1. Set marginal stops the desired width apart. Right stop at 6; left stop as many inches left of 6 as corresponds with column width.

2. Bank carriage firmly against left stop and press 1/3 spacer twice.

3. Move marginal pointer to mark at top of dial. Insert paper.

4. Type a test line of l’s to see how many increments there are in column width. The beginning position of test line is the position of marginal pointer at top of marginal dial. The end position is zero (last mark on justifier dial).

   a. Type l’s in groups of nine and one space. (This is equivalent to typing 10 l’s, because the space bar and the l each take 2 increments.) This also makes test line easier to count.

   Example:                               - Total - 64 l’s or
       1111111111 1111111111 1111111111    128 increments
          10  20  30  40  50  60  4

   b. Watch justifier pointer as it approaches zero on dial. If pointer is resting on odd numbers - e.g. 9, 7, 5 - , stop on “3” and type the letter “n.” This will give a complete test line which can be converted into increments.

   Example:                               - Total - 47 l’s or
       11111111111111111111111111111111    94 increments plus
          10  20  30  40  7 and 1 “n”      3 (n)
          Total - 97 increments

   c. If pointer stops on “2” on justifier dial, just after typing the 9th “l” of a group, do NOT use space bar to finish out test line. Instead, type the tenth “l” thus bringing justifier pointer to zero.

   Example:                               - Total - 60 l’s or
       11111111111111111111111111111111    120 increments
          10  20  30  40  50  60

5. Compare the test line with the correct number of increments for that column width, as determined by reading the DSJ scale. The test line will be either

   a. Exactly right
   b. Too long
   c. Too short
6. Adjust test line to proper width:

a. If test line is TOO LONG:
   (1) Return to starting point.
   (2) Press 1/3 spacer once for each increment test line exceeds correct width.
   (3) Reset starting point (move marginal pointer to top of dial).
   (4) Retype adjusted test line.

   Example: Test line = 130 increments
            Correct line = 128 increments

b. If test line is TOO SHORT:
   (1) Return to starting point.
   (2) Press 1/3 BACK spacer once for each increment test line is short of correct width. If many
       more increments are required it will be necessary to move left marginal stop one position to
       the left.
   (3) Reset starting point (move marginal pointer to top of dial).
   (4) Retype adjusted test line.

   Example: Test line = 125 increments
            Correct line = 128 increments

JUSTIFIER TEST

After adjusting test line to proper width, it is advisable to run a test of the justifier operation. This can
easily be done by repeating the adjusted test line (of l’s) on the right side of the page; then, below adjusted test
line, type another line of l’s, extending the line into the justifying area but stopping short of zero on justifier
dial. Repeat this line on right side of page. If it is even with first line, justifier is operating properly. If this
second line does not stretch out at all, check to see if actuating bar lock is disengaged.

COLUMN WIDTH AND JUSTIFIER TESTS

<table>
<thead>
<tr>
<th>Test line TOO LONG:</th>
<th>Justifier Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l (129 inc.)</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test line TOO SHORT:</th>
<th>Justifier Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l (125 inc.)</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
<tr>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
<td>l l l l l l l l l l l l l l l l l l l l l l l l l l l</td>
</tr>
</tbody>
</table>

After the test line is adjusted and justifier test is completed, you are now ready to type pages and pages of copy
at this column width, with the assurance that the copy will fit the exact measurement for which it is intended.
With a little practice, the entire column width and justifier test can be completed in a matter of seconds.
Subheadings in Justified Copy

CENTERED SUBHEADINGS

Following are the steps for centering a subheading that occurs while justifying copy:

1. Line up carriage at starting point of rough copy (marginal pointer at top of dial).
2. Type heading. If heading is to appear in all capital letters on justified side, type it in all caps on rough copy side.
3. Immediately after heading is typed, type m's until justifier pointer reaches either 3, 2, 1, or zero. If pointer stops on 3 or 2, add one "p" 1 or 0, leave setting alone.
   Type m's in groups of 9 m's plus a capital M (as the tenth m). This will make them easier to count later.
4. Tabulate and line up with justifying starting point.
5. Put non-print key on non-print.
6. Indent one-half of the number of m's left on line after subheading was typed. Use m key, l key, and/or 1/3 spacer.
   Examples: 14 m's on rough copy — indent 7 m's on justified side.
   17 m's on rough copy — indent 8 m's and one l on justified side.
   18 m's plus one l on rough copy — indent 9 m's and 1/3 space on justified side.
7. Type subheading.

by John Henry Jones

The above heading is an example of a flush right subheading that is typed flush left on rough copy side and transposed on justified copy.

FLUSH LEFT SUBHEADINGS

Headings that are lined up with the left margin of text matter are called flush left headings. To type such a heading, simply line up carriage with starting point of justified copy and type heading.

by John Henry Jones

The above heading is an example of a flush left subheading that is typed flush left on rough copy side.

FLUSH RIGHT SUBHEADINGS

Headings that are lined up with the right margin of text matter are called flush right headings. Following are the steps for typing a flush right subheading:

1. Type heading flush left on rough copy.
2. Type m's (and/or n and l) until justifier pointer reaches zero.
3. Tabulate and line up at justified copy starting point.
4. Put non-print key on non-print.
5. Indent full number of m's (and n's or l's) and type heading.

by John Henry Jones

The above heading is an example of a flush right subheading that is typed flush left on rough copy side and transposed on justified copy.
Justifying Indentations

It is frequently necessary to change from a wider to a narrower column width — to fit copy around a picture, to outline a step-by-step procedure, or just to change the appearance of the copy. Such changes in copy width are called run-arounds or indentations. There are three types of indentations — copy indented from the left, from the right, or from both margins.

INDENTATION FROM THE LEFT MARGIN

1. Determine the total indentation desired in terms of increments. Example: 40 increments
2. Divide the number of increments of indentation by $4$ — to find the number of $m$’s to type in Step 3.
3. Line up rough copy starting point, type the number of $m$’s figured in Step 2, and put a pencil mark on the marginal dial even with the position of the marginal pointer. Mark this position with the letter ‘‘R’’ (for rough copy). Type line of copy.
   
   Example: Type 10 $m$’s, mark dial, and type line of copy.
4. Tabulate and line up at justified copy starting point.
5. Put non-print key on non-print.
6. Type the same number of $m$’s as used on rough copy, put a second pencil mark on marginal dial even with position of marginal pointer. Mark this position with the letter ‘‘J’’ (for justified copy). Type justified line of copy.
7. On each succeeding line, bank carriage against left stop (to clear the justifier dial), move carriage (with carriage release lever) to the ‘‘R’’ mark on dial. Use either 1/3 spacer or 1/3 back spacer to position pointer exactly on mark. Type rough copy line.
8. On justified side (after tabulating), move carriage to ‘‘J’’ mark on dial. Type justified line.
   
   Never use space bar to indent on either rough copy or justified copy.

Sample of copy indented from Left Margin

This is a sample of copy composed on the DSJ Vari-Typer, showing indentation of copy from the left margin. The $m$’s were a means of counting the number of increments to deduct from the column width. They were used on the first line only. On following lines the carriage was moved

INDENTATION FROM THE RIGHT MARGIN

Follow the same steps as for a left margin indentation up to Step 5. Then simply type justified line of copy. Since this is an indentation from the right margin, a new starting point for the justified copy is unnecessary. Note, however, that the rough copy is typed in exactly the same manner for both types of indentation.

Sample of copy indented from Right Margin

This is a sample of copy composed on the DSJ Vari-Typer, showing the indentation of copy from the right margin. The $m$’s were a means of counting the number of increments to deduct from the column width. They were used on the first line only. On following lines the carriage was moved
INDENTATION FROM BOTH MARGINS

Copy that is indented from both margins may or may not be centered. In either case, it is necessary to indent the total number of increments on the rough copy side. Then the total increments can be divided in whatever manner is desired for the indented copy. The instructions below apply to centered indented copy:

1. Determine the total indentation desired (left margin plus the right) in terms of increments.
2. Translate the total number of increments into m's (or m's plus an l or n).
3. Line up at rough copy starting point, type the number of m's figured in Step 2, and put a pencil mark on the marginal dial even with the position of the marginal pointer. Mark this position with the letter “R” to indicate new starting point for rough copy. Type line of copy.
4. Tabulate and line up at justified copy starting point.
5. Put non-print key on non-print.
6. Type one-half of the number of m's as used on rough copy, put a second pencil mark on marginal dial even with marginal pointer position. Mark this position with letter “J” to indicate starting position for justified copy. Type justified line of copy.
7. On each succeeding line, bank carriage against left stop (to clear the justifier dial), move carriage (with carriage release lever) to the “R” mark on dial. Use either 1/3 spacer or 1/3 back spacer to position pointer exactly on mark. Type rough copy line.
8. On justified side (after tabulating), move carriage to “J” mark on dial. Type justified line.

Sample of copy indented from Both Margins

This is a sample of copy composed on the DSJ Vari-Typer, showing the indentation of copy from mmmmmmmmm both margins. The m's were a means of counting the number of increments to deduct from the column width. They were used on the first line only. On following lines the carriage was moved

This is a sample of copy composed on the DSJ Vari-Typer, showing the indentation of copy from both margins. The m's were a means of counting the number of increments to deduct from the column width. They were used on the first line only. On following lines the carriage was moved

Note: When converting increments into m's, it may be necessary to use the letter n and/or the letter l to obtain the full number of increments.

Examples:
- 47 increments = 11 m's plus one n (44 plus 3)
- 34 increments = 8 m's plus one l (32 plus 2)
- 29 increments = 6 m's plus one l and one n (24 plus 2 plus 3)

Practice Exercise:
1. Set justifier for 23 pica column width at B spacing. Type 5 lines of copy at this width.
2. Indent 5 picas from the left margin and type 5 lines of copy.
3. Type 3 lines of copy at 23 pica width.
4. Indent 8 picas from right margin and type 5 lines of copy.
5. Type 3 lines of copy at 23 pica width.
6. Indent 2 picas from each margin and type 5 lines of copy.
7. Type 5 lines of copy at 23 pica width.
Justifying—Copy Limits and Variations

After the justifier has been set and the rough copy line has been typed, the justified line can be placed anywhere on the sheet of paper, providing it is right of the rough copy. The justified line can even be placed on a separate sheet of paper (or direct plate or other type of master). Because of the flexible nature of the justifier, copy with a variety of shapes can be easily produced. Below are some samples of these variations.

SLANTING MARGINS — LEFT AND RIGHT

1. Set justifier for given column width.
2. Type rough copy line, tabulate, and repeat on justified side.
3. Type second rough copy line.
4. Tabulate, line up with justified starting point, and indent a given number of increments (e.g. 6). Type justified line.
5. On each succeeding line, type rough copy in usual manner, but indent justified copy a given number of increments more on each successive line. For example, line 2 would be indented 6 increments; line 3, 12 increments; line 4, 18 increments, etc.

Sample of Slanting Margins

This is a sample of copy composed on the DSJ Vari-Typer. The rough copy is typed in the usual manner, but each justified line is indented a few more increments than the previous line. This produces an interesting variation in the

SLANTING MARGINS — ONE SIDE ONLY

1. Set justifier for given column width and type first rough copy and justified in usual manner.
2. Indent rough copy line a given number of increments (e.g. 6).
3. On justified copy, indent same number of increments as on rough copy, if slanting left margin is desired. If slanting left margin is desired, indent same number of increments on justified copy as used on rough copy. If slanting right margin is desired, do not indent justified line.
4. Increase the amount of indentation (by the same number of increments) on each rough copy line.

Sample of Slanting Left Margin

This is a sample of copy composed on the DSJ mlVari-Typer. Each line of the rough copy is indented an increasing number of increments, producing a slanting left margin

Sample of Slanting Right Margin

This is a sample of copy composed on the DSJ mlVari-Typer. Each line of the rough copy is indented an increasing number of increments, producing a slanting right margin

Each of the above examples can be continued until column width reaches the limit of justification. This limit is two words on a line. Since the justifier stretches between words, it cannot justify a one-word line.

There are numerous other copy variations that can be composed on the Vari-Typer. Try those above and try some of your own variations.

22
NARROW COLUMN WIDTHS

The position of the marginal stops normally controls the width of column that can be justified. The closest these stops can be placed is 1½" apart. This does not mean, however, that a narrower column width cannot be justified. The actual limitation is the number of words on a line. There must be two words on a line for the line to justify.

Narrow column widths are handled in the same manner as a right margin indentation, according to the following steps:

1. Set marginal stops 1½" apart (4½ and 6).
2. Line up rough copy starting point and type test line of 1's.
   
   \textit{Example:} \text{IIIIIIII IIIIIIIII IIIIIIIII II} \hspace{1cm} (32 1's) – (64 increments)

3. Determine the number of increments desired in given width. \textit{Example:} 7 pica width – 50 inc. at B.
4. Return to rough copy starting point and subtract the number of increments required from the number obtained in test line. Space in this number of increments. \textit{Example:} Space in 14 increments.
5. Reset marginal pointer to mark at top of dial. This is the starting point of the rough copy.
6. Type line of copy, tabulate, line up at justified starting point, and repeat line.

\textbf{Sample of 7 Pica Width}

\begin{center}
\begin{tabular}{l}
\text{IIIIIIII IIIIIIIII IIIIIIIII II} \hspace{1cm} (32 1's – 64 inc.)
\text{IIIIIIII IIIIIIIII III} \hspace{1cm} (25 1's – 50 inc.)

This is a sample of a narrow column width of copy. This is an extremely difficult width to justify.
This is a sample of a narrow column width of copy. This is an extremely difficult width to justify.
\end{tabular}
\end{center}

Notice that narrow widths of copy often have large gaps between words, because there are usually so few words on each line. One method of overcoming this problem is to \textit{letterspace} a word on the line. This is done in line 4 of the above example. The word “extremely” has one increment (1/3 space) between letters of the word. This is a valid technique if used sparingly, or only when necessary.

WIDE COLUMN WIDTHS

According to previous justifier instructions, the widest column width for which the justifier can be set is 6" (left stop at "0", right stop at "6"). Normally, this is the widest column width that would be necessary in most copy composition, because as column widths become wider, copy becomes more difficult to read. Narrow column widths, from 2½ to 3½", are the easiest to read. These are the widths used in most magazines and newspapers.

There are occasions when wide column widths are used, such as in legal briefs, contracts, insurance policies, etc. It is possible to \textit{automatically justify} column widths up to 7½" by changing the position of the marginal stops and the tabulator stop.

1. Set left marginal stop at zero. Set right stop one notch to the right of 7½. (This will allow full increment value of a 7½" width).
2. Set tabulator stop three notches past 7½ on tabulator scale. This will allow one pica (1/6 of an inch) between rough and justified copy.
3. Tabulate (after typing rough copy), and press 1/3 back spacer twice before setting outer rim for justifier starting position. This will allow maximum copy width on justified side.
WIDER COLUMN WIDTHS - Over 7½"

Column widths wider than 7½" can be obtained by following these steps:

1. Set marginal stops for one-half the width desired. Type a test line of l’s and adjust test line to correct increment width.
2. Type rough copy line, tabulate, type justified copy. After typing last character, put a pencil mark on marginal dial to match position of marginal pointer.
3. Move paper down in machine 1/2 of vertical line spacing being used, or insert a small piece of paper over first rough copy line.
4. Type rough copy for second half of line.
5. Tabulate and move carriage to end position of first-half of justified line.
6. Tabulate and move carriage to pencil mark at end of first justified line.
7. Return to correct vertical line position.
8. Type second half of justified line.

The first half of the line may end:
   1. In the middle of a word without regard to syllable.
   2. With a space following a completed word.
   3. With a completed word.

If first half of line ends with a completed word, return carriage to starting point of rough copy, type the next word, and then strike space bar twice. Never start a rough copy line with a space bar stroke. The space can be placed in proper position when justified copy is typed.

The second half of the line must end with a completed or properly hyphenated word.

Try to keep the amount of stretch nearly the same on both parts of the line. This can be done by allowing justifier dial pointer to stop in nearly the same place on dial for both the first and second half of the line.

Sample of Justified Copy, Double the Rough Copy Width

The finished layout is usually made up of photo prints of the art and proofs of type pasted up to make the work appear in form as though printed. Very often the lay...
MANUAL JUSTIFICATION

Sometimes it is advisable to justify copy manually. For example, if there are only a few lines of copy to be justified on a form, or on a direct plate master, it may be easier to prepare rough copy and justify the lines manually. The same is often true for extra wide column widths of copy.

1. Set marginal stops the desired width apart.
   
   Example: For a 4 inch column, left stop could be set at 5 and the right stop at 9.

2. Type a test line of I's and adjust test line to exact increment width.

3. Adjust justifier pointer, using adjuster knob at end of paper basket, so that justifier pointer lines up exactly on zero at the end of a line.

4. Type rough copy. As carriage approaches end of line, notice the position of the dial pointer. Move the carriage with the carriage release lever to pass the right marginal stop and type the number shown on the dial at end of line. If line extends beyond zero, count the number of increments over (by third-back spacing to zero), and place the number in the margin, preceded by a minus (−) sign. This will indicate the number of increments that must be removed from the line to justify it.

5. Mark the rough copy. Use a check mark (✓) at places where an increment is to be added; a circle, at places where an increment is to be removed.

6. Insert master copy sheet and line up at desired starting position on page.

7. Type justified copy. Add an extra increment (1/3 space) at each check mark. At each circle marking, use the 1/3 spacer instead of the space bar. This will place 1 increment between words instead of the usual 2 increments the space bar takes.

Sample of Rough Copy for Manual Justification

| I | I | I | I | I | I | I | I | I | I | I | I | I | I | I | I | I | I | I |

Picture Writing began 5,000 years ago, and gradually developed into symbols which represented words instead of objects. A further development, about 1,500 years later, was the alphabet. This alphabet was created by the Semites, near Egypt about the second century.

Sample of Copy Justified Manually

Picture Writing began 5,000 years ago, and gradually developed into symbols which represented words instead of objects. A further development, about 1,500 years later, was the alphabet. This alphabet was created by the Semites, near Egypt about the second century.

MEASURING COLUMN WIDTHS OVER 6"

The DSJ Increment Scale will give you the correct number of increments in any column width up to 6 inches. There may be occasions, however, when it is necessary to compose or plan copy that is wider than 6 inches. The simplest way to find the number of increments in such a width is to multiply the number of increments per inch by the number of inches in the copy width. Below is a table that lists the number of increments per inch at each of the four horizontal spacings:

- A spacing = 39 increments per inch
- B spacing = 43 increments per inch
- C spacing = 47.5 increments per inch
- D spacing = 53 increments per inch

Example: An 8" column width at B spacing would equal 344 increments (8 × 43).

It is interesting to note that if you divide the number of increments per inch for any of the above spacings by three (increments in an average space), the answer you get is equal to the number of characters per inch at that spacing when the machine is set for standard spacing or types.
Tabular copy is any copy that consists of columns of names and/or figures. Price lists, time schedules, catalog pages, rate sheets and financial statements are some examples of tabular copy.

A table is set up on the DS/ Vari-Typer in much the same manner as on a typewriter. Adequate space must be allowed for each column and for space between the columns. Instead of being limited to one spacing, as on a typewriter, the Vari-Typer provides a choice of spacings that can be adapted to the table. In this way a table can be condensed to fit on a smaller page, making it easier to handle and file, without sacrificing any degree of clarity. The use of contrasting types and white space creates a table that is easier to read even when smaller types are employed.

The following copy is an example of a simple, four-column table in typewritten form. This table is to be condensed to a 4" width.

**RECORD OF SCHOOL EXPENDITURES PER PUPIL**
**IN SHORELINE TOWNS, 1947-1948**

<table>
<thead>
<tr>
<th>TOWN</th>
<th>STATE AID</th>
<th>LOCAL FUNDS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branford</td>
<td>$41.40</td>
<td>$98.42</td>
<td>$139.82</td>
</tr>
<tr>
<td>North Branford</td>
<td>64.88</td>
<td>107.32</td>
<td>172.20</td>
</tr>
<tr>
<td>Chester</td>
<td>73.02</td>
<td>121.31</td>
<td>194.33</td>
</tr>
<tr>
<td>Clinton</td>
<td>61.61</td>
<td>98.42</td>
<td>159.83</td>
</tr>
<tr>
<td>Deep River</td>
<td>63.88</td>
<td>124.60</td>
<td>188.48</td>
</tr>
<tr>
<td>East Haddam</td>
<td>69.88</td>
<td>70.45</td>
<td>139.33</td>
</tr>
<tr>
<td>East Lyme</td>
<td>62.55</td>
<td>91.57</td>
<td>154.12</td>
</tr>
<tr>
<td>Essex</td>
<td>63.43</td>
<td>176.48</td>
<td>239.91</td>
</tr>
<tr>
<td>Guilford</td>
<td>58.86</td>
<td>122.84</td>
<td>181.70</td>
</tr>
<tr>
<td>Haddam</td>
<td>63.87</td>
<td>60.82</td>
<td>124.69</td>
</tr>
<tr>
<td>Killingworth</td>
<td>105.95</td>
<td>30.56</td>
<td>136.51</td>
</tr>
<tr>
<td>Lyme</td>
<td>97.59</td>
<td>66.82</td>
<td>164.41</td>
</tr>
</tbody>
</table>

The procedure for planning the horizontal arrangement of tabular copy is listed below. (See page 29 for vertical copy planning.)

1. Count the number of increments in the longest line in each column. Count both the longest line in each column heading and the longest line in each column below the heading. Write these figures neatly on a sheet of paper.

   **Example of Table Planning**
   
<table>
<thead>
<tr>
<th></th>
<th>Col. 1</th>
<th>Col. 2</th>
<th>Col. 3</th>
<th>Col. 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heading</td>
<td>16</td>
<td>31</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>Copy</td>
<td>38</td>
<td>14*</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

   * In Col. 2 we selected the average rather than the longest line (for purposes of centering copy properly under heading. In all cases of above figures, the dollar ($) sign was disregarded, because it is used on only the first line of figures and would distort the centering of copy under the heading.

2. Total the number of increments in the longest line of each column.

   **Example:** 38 + 31 + 41 + 20 = 130 increments.

   This is the total number of increments that must be allowed for copy space.

3. Select the copy width to be used for the table. This is usually given in advance. Unless otherwise specified, it is the page width minus margins.

   **Example:** Copy to be set in 4" width.
4. Select a horizontal spacing that will accommodate the copy and allow adequate space between columns. Start with the widest spacing (A) and if this is too large, try the next widest spacing (B). Continue until you find the spacing that provides enough room for the copy. With practice you will be able to select the proper spacing at first glance.

Example: 4" at A spacing = 156 increments

5. Subtract the total number of increments obtained in Step 2 from the total increments in column width.

Example: 156 − 130 = 26 increments to divide between columns.

6. Divide space equally as possible between columns.

Example: There are 4 columns, so there are 3 places between columns.

\[
26 ÷ 3 = 8 \text{ increments (plus 2 left over)}
\]

A spacing will work for this table, but it leaves less than 3 full spaces between columns. The table would look much better at a slightly smaller spacing, with more space between columns.

**Copy Planned at B Spacing**

4" at B spacing = 172 increments

\[
42 ÷ 3 = 14 \text{ increments between columns}
\]

<table>
<thead>
<tr>
<th>Col. 1</th>
<th>Col. 2</th>
<th>Col. 3</th>
<th>Col. 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heading</td>
<td>16</td>
<td>31</td>
<td>41</td>
</tr>
<tr>
<td>Copy</td>
<td>38</td>
<td>14</td>
<td>17</td>
</tr>
</tbody>
</table>

7. Place white plastic dial around left marginal dial and space out copy positions (starting points) and mark each position on dial.

Example:

a. Bring marginal pointer to top of dial and mark (1C) — for starting point of first column.
b. Space 38 increments and mark 1E for end of Col. 1
c. Space 14 increments and mark 2H for starting point of heading of Col. 2
d. Space 31 increments and mark 2E for end of Col. 2
e. Space 14 increments and mark 3H for starting point of heading of Col. 3
f. Space 41 increments and mark 3E for end of Col. 3
g. Space 14 increments and mark 4H for starting point of heading of Col. 4
h. Space 20 increments and mark 4E for end of Col. 4
i. Return to beginning and repeat each step, checking markings made on dial.

8. Type headings and place any new markings on dial required for columns of copy.

Example:

a. Type main heading centering it between 1C and 4E markings on dial.
b. Return to 1C. Space in 11 increments (1/2 the difference between number of increments in heading and increments in column width, i.e. 38 − 16 or 22 increments), Type heading.
c. Space over to 2H and type heading; to 3H, and type heading; to 4H, and type heading.
d. Return to 1C and type first line of copy (Brannford).
e. Space to 2H. Indent 8 increments (1/2 of 31−14) and mark 2C on dial. This is starting point for copy of Col. 2. Back space 6 increments, type $ sign, space 3 increments, type figure (41,40).
f. Space to 3H. Indent 12 increments (1/2 of 41−17) and mark 3C on dial. This is starting point for copy of Col. 3. Back space 3 increments, type $ sign, space 3 increments, type figure (98,42).
g. Space to 4H. Indent 2 increments (1/2 of 20−17) and mark 4C on dial. This is starting point for copy of Col. 4. Back space 3 increments, type $ sign and figure (139,82).
9. Erase all but necessary markings for starting points of the columns of copy.

Example: Erase 1E, 2H, 2E, 3H, 3E, 4H, and 4E.

This should leave four marked positions — 1C, 2C, 3C, and 4C.
(Some prefer to simply call these markings 1, 2, 3, and 4).

The illustration shows the white plastic dial with the proper markings for the sample table. If you have tried setting up this table, your dial markings should be in same relative position as those shown in illustration.

Practice Exercise:

Set in a column width 3½ inches wide.

<table>
<thead>
<tr>
<th>Burgess PORTABLE &quot;A&quot; BATTERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stock No.</strong></td>
</tr>
<tr>
<td>2OH19854</td>
</tr>
<tr>
<td>2OH19850</td>
</tr>
<tr>
<td>2OH20625</td>
</tr>
<tr>
<td>2OH19851</td>
</tr>
<tr>
<td>2OH20628</td>
</tr>
<tr>
<td>2OH19828</td>
</tr>
<tr>
<td>2OH20610</td>
</tr>
<tr>
<td>2OH20629</td>
</tr>
<tr>
<td>2OH20630</td>
</tr>
<tr>
<td>2OH19842</td>
</tr>
<tr>
<td>2OH20613</td>
</tr>
<tr>
<td>2OH20631</td>
</tr>
<tr>
<td>2OH20632</td>
</tr>
<tr>
<td>2OH19843</td>
</tr>
<tr>
<td>2OH20626</td>
</tr>
</tbody>
</table>
THE POINT

The point, like the inch, is simply a unit of measurement. For example, a sheet of paper that is three inches wide and five inches long could also be measured in points. The point has a decimal value, which most closely approximates 1/72 of an inch. In other words, there are 72 points in one inch.

THE PICA

In the early days of book composition there was no numerical system for determining type size. Each size of type was known by name. The origin of some of these names is rather obscure. Some were named for precious stones, such as diamond, pearl, and agate. Some were named for their originator; others for their original usage. Of all of these names only two are still commonly used today — the agate (5½ point size) used in measuring advertising space and the pica (12 point size).

The pica has become a common unit for measuring copy size. Since it is a larger unit than a point, it is an easier unit to use for measurement. However, it is easy to convert picas into points by simply multiplying by 12. Or inches can also be converted to points by multiplying by 72.

PLANNING VERTICAL SPACING AND LEADING

The following method will enable you to determine the vertical spacing and leading to use for any composition job. It will also act as a guide for type selection:

1. Measure the copy area in picas.
2. Count the lines of copy.
3. Convert the length of copy area from picas into points. (Multiply number of picas by 12).
4. Divide the length of copy area (in points) by the number of lines to find the vertical spacing per line.
5. Select a type that is equal to or smaller than the vertical space allotted per line. The difference between the type size and the vertical spacing per line is the leading.

   — Example —

1. Copy area is 3" x 5" or 18 picas wide and 30 picas deep (long).
2. Number of lines — 36
3. Length of copy in points — 360 points (30 picas x 12 points per pica)
4. Vertical space per line — 10 points (360 points divided by 36 lines)
5. Set linomatic to obtain 10 points per line and select either a —
   10 point type (for copy set solid)
   9 point type (for copy leaded 1 point)
   8 point type (for copy leaded 2 points)

Frequently, when planning vertical spacing of copy, there are a few points left over (in Step 4). This extra space can usually be distributed above and below subheadings or below main heading of copy.

Practice Exercises:
1. Fit table on page 26 into copy area 13½ picas long. (Record of School Expenditures, etc.)
2. Fit table on page 28 into copy area 16 picas long. (Burgess Portable "A" Batteries)
Vertical Planning

VARI-LINE GEARS

Early DSJ models were not equipped with linomatic spacing lever. Instead, they had one spacing gear built into the machine (on left side of feed rolls) and 10 special Vari-Line gears that could be inserted on right end of carriage to produce other vertical spacings. The left gear produces 4 points per click. The point spacing obtained from the other 10 gears are listed on the chart below.

<table>
<thead>
<tr>
<th>No. of Clicks</th>
<th>6 pt</th>
<th>7½ pt</th>
<th>8½ pt</th>
<th>9 pt</th>
<th>9⁵⁄₈ pt</th>
<th>10 pt</th>
<th>11 pt</th>
<th>12 pt</th>
<th>13 pt</th>
<th>14 pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 pt</td>
<td>5 pt</td>
<td>6 pt</td>
<td>7 pt</td>
<td>8 pt</td>
<td>9 pt</td>
<td>10 pt</td>
<td>11 pt</td>
<td>12 pt</td>
<td>13 pt</td>
</tr>
<tr>
<td>2</td>
<td>12 pt</td>
<td>11 pt</td>
<td>10 pt</td>
<td>9 pt</td>
<td>8½ pt</td>
<td>7½ pt</td>
<td>7 pt</td>
<td>6½ pt</td>
<td>6 pt</td>
<td>5½ pt</td>
</tr>
<tr>
<td>3</td>
<td>18 pt</td>
<td>17½ pt</td>
<td>16½ pt</td>
<td>15½ pt</td>
<td>14½ pt</td>
<td>13½ pt</td>
<td>12½ pt</td>
<td>11½ pt</td>
<td>10½ pt</td>
<td>9½ pt</td>
</tr>
</tbody>
</table>

By using the various gears the number of clicks specified in the above chart you can obtain an almost endless variety of vertical spacings.

VERTICAL SPACING SCALE

A special scale has been devised for use with the Vari-Line gears. Along the top of the scale is the marking shown on the gear itself, e.g. 6 pt., 11 pt. etc. In each column below the gear marking is a scale which shows the amount of space one click of the gear produces. This is the same value shown on the “1 click” row of the above chart.

The scale can be a great time-saving device in planning vertical spacing. It is only necessary to know how many clicks are required to produce the vertical spacing listed at top of the scale, and this information can be obtained from the above gear chart.

Example: 24 lines of copy — to be fitted in 3 inches vertically.

Start with the first spacing listed on right side of scale (6 points). According to the gear chart, one click of this gear equals 6 points. Thus each division on the scale is equal to one line of 6 point spacing. Looking down the scale, we find that

24 lines measure 2 inches at 6 point spacing.

Try the next spacing (11 point). Here 2 clicks are required to produce 11 point spacing, so it takes two divisions on the scale to equal one 11 point line. Look down the scale to 48, and we find that

24 lines measure nearly 3¾” at 11 point spacing.

We can skip 5½ point, for if 6 point were too small, 5½ point would also be too small a spacing.

Try 10 point. It requires 2 clicks per line. 48 clicks (24 lines) measure over 3 inches.

Try 9½ point. This gear also requires 2 clicks per line. 48 clicks (or 24 lines) measure over 3 inches.

Try 9 point (also requires 2 clicks). 48 clicks measure exactly 3 inches.

In addition to the ten Vari-Line gears, the Vertical Spacing Scale has a column marked “8 points.” This refers to the gear built into the left side of early DSJ models. This same gear is the one inserted on the right side of later DSJ models equipped with linomatics. One click of this gear equals 4 points, and every division on the 8 point scale equals 4 points.

Practice exercises: 1. Fit 36 lines into 4 inches….into 3½ inches.
2. Fit 45 lines into 6 inches….into 5 inches.
Copy Fitting

Fitting copy into a given copy area is relatively simple when the copy consists of a table or form that has a pre-determined number of lines. Text copy of a continuous nature can have a variable number of lines, depending on the horizontal spacing used to compose the copy. It is necessary, therefore, to follow a slightly different procedure when fitting text copy to a given area.

Below is a sample of a typewritten paragraph of copy to be fitted to a given copy area. Copy must be type-written first before copy fitting is attempted. This is usually advisable anyway in order to make any author's alterations or corrections before copy is finally composed.

Compose the following copy in a copy area 23½ picas wide and 2.3 inches deep.

The modern homemaker is an artist at heart. Her gentle, skillful touch gives life and loveliness to her home. She selects each treasured furnishing and each valued appliance with an eye for beauty as well as utility. That's why so many homemakers everywhere have made Maytag the washer of their choice. The flowing, graceful lines...the pure-white enamel finish...the bright red and sparkling-clean metal trim—all make the Maytag fairly shine with beauty on every spotless surface. But performance in a washer is important, too. And that's another convincing reason for the overwhelming preference for Maytag all over the land. Through the years, more than 5½ million Maytags have been sold—far more than any other. Your nearby Maytag dealer will be glad to give you a demonstration of any of the famous models of Maytags. Why not give him a call today?

1. Find the total character count of the typewritten copy:
   a. Find the average number of characters per line.
      Measure an average line (with a ruler), find the number of typewritten characters per inch, and multiply number of inches by characters per inch. (Add any characters beyond an even number of inches.)
      Example: The first line in above copy is an average line. It measures 6' plus 4 characters.
      \[ 6' \times 12 \text{ characters per inch} = 72 \text{ characters in one line} \]
      \[ 72 + 4 = 76 \text{ average characters per line} \]
   b. Count the number of lines. Example: 11 complete lines.
   c. Multiply the number of lines by the average number of characters per line.
      Example: 11 lines \times 76 characters per line = 836 characters
   d. Add the extra characters in the short, last line of paragraph.
      Example: 836 + 13 extra characters = 849 characters. This is the total character count.

2. Select a horizontal spacing to use when composing copy on DSJ Vari-Typer. Start with largest spacing (A spacing).

3. Find the average number of characters per line when copy is composed on DSJ at given column width and selected horizontal spacing. Look at Copy Fitting Chart on next page (page 32). Find column width in first column; look across this row to column marked A (13). The number shown is the number of characters per line at given width and spacing.

Example: 23½ pica width at A spacing.
Number of characters at 23 pica width is 55.
Number of characters at 24 pica width is 57.
Number of characters at 23½ pica width would be 56.
### COPY FITTING CHART

<table>
<thead>
<tr>
<th>Column Width</th>
<th>Number of Characters Per Line</th>
<th>Picas</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A (12)</td>
<td>A (13)</td>
<td>B</td>
</tr>
<tr>
<td>1</td>
<td>2.28*</td>
<td>2.47*</td>
<td>2.72*</td>
</tr>
<tr>
<td>2</td>
<td>2.5</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>5.5</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>9.5</td>
<td>10</td>
<td>11.5</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>18.5</td>
<td>20</td>
<td>22.5</td>
</tr>
<tr>
<td>10</td>
<td>21</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>23</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>12</td>
<td>25</td>
<td>28</td>
<td>31</td>
</tr>
<tr>
<td>13</td>
<td>28</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>14</td>
<td>30</td>
<td>32.5</td>
<td>36</td>
</tr>
<tr>
<td>15</td>
<td>32</td>
<td>35</td>
<td>39</td>
</tr>
<tr>
<td>16</td>
<td>34.5</td>
<td>37.5</td>
<td>41.5</td>
</tr>
<tr>
<td>17</td>
<td>37</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>18</td>
<td>39</td>
<td>42.5</td>
<td>47</td>
</tr>
<tr>
<td>19</td>
<td>41</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>20</td>
<td>43.5</td>
<td>47.5</td>
<td>52.5</td>
</tr>
<tr>
<td>21</td>
<td>46</td>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>22</td>
<td>48</td>
<td>52</td>
<td>58</td>
</tr>
<tr>
<td>23</td>
<td>50.5</td>
<td>55</td>
<td>60.5</td>
</tr>
<tr>
<td>24</td>
<td>53</td>
<td>57</td>
<td>63</td>
</tr>
<tr>
<td>25</td>
<td>55</td>
<td>60</td>
<td>66</td>
</tr>
<tr>
<td>26</td>
<td>57</td>
<td>62</td>
<td>69</td>
</tr>
<tr>
<td>27</td>
<td>59.5</td>
<td>65</td>
<td>71.5</td>
</tr>
<tr>
<td>28</td>
<td>62</td>
<td>67</td>
<td>74</td>
</tr>
<tr>
<td>29</td>
<td>64</td>
<td>70</td>
<td>77</td>
</tr>
<tr>
<td>30</td>
<td>5.6</td>
<td>57</td>
<td>63</td>
</tr>
<tr>
<td>31</td>
<td>69</td>
<td>74.5</td>
<td>82</td>
</tr>
<tr>
<td>32</td>
<td>71</td>
<td>77</td>
<td>85</td>
</tr>
<tr>
<td>33</td>
<td>73</td>
<td>79.5</td>
<td>88</td>
</tr>
<tr>
<td>34</td>
<td>75.5</td>
<td>82</td>
<td>90.5</td>
</tr>
<tr>
<td>35</td>
<td>78</td>
<td>84.5</td>
<td>93</td>
</tr>
<tr>
<td>36</td>
<td>80</td>
<td>87</td>
<td>96</td>
</tr>
<tr>
<td>37</td>
<td>82</td>
<td>89</td>
<td>99</td>
</tr>
<tr>
<td>38</td>
<td>85</td>
<td>92</td>
<td>101</td>
</tr>
<tr>
<td>39</td>
<td>87</td>
<td>94</td>
<td>104</td>
</tr>
<tr>
<td>40</td>
<td>89</td>
<td>97</td>
<td>107</td>
</tr>
<tr>
<td>41</td>
<td>91.5</td>
<td>99</td>
<td>109.5</td>
</tr>
<tr>
<td>42</td>
<td>94</td>
<td>102</td>
<td>112</td>
</tr>
</tbody>
</table>

*The characters per pica for each spacing are given to exact decimal measurements. Characters per line in other column widths have been rounded for easier calculations and two characters have been subtracted to allow for the character loss that occurs in most justified copy. Copy fitting is always an approximation. Thus the figures used in this table are considered to be the most practical for the average copy fitting problem.
4. Find the total number of lines when copy is Vari-Typed at given column width and selected spacing.
   a. Divide total character count by average characters per line (Step 3).
      Example: $849 \div 56 = 16$ lines

5. Convert copy depth into points.
   a. Multiply copy depth in inches by 72 or pica depth by 12.
      Example: $2.3'' \times 72$ points per inch = 165.6 or 166 points.

6. Find vertical spacing per line when copy is Vari-Typed at given width and selected spacing.
   a. Divide copy depth in points by number of lines (Step 4).
      Example: $166$ points $\div 16$ lines = $10\frac{3}{8}$ or $10\frac{1}{2}$ points per line.

7. Compare vertical point spacing per line with selected type size. If the vertical spacing is equal to or greater than type size, the selected type may be used. However, if the type size is larger than the vertical spacing, the selected type and spacing cannot be used. The problem must then be reworked using a smaller horizontal spacing. The following table can be used as a general guide in determining relation of type size to spacing. (There are a few condensed and expanded types that do not conform to this table, but these are exceptions that can be considered separately.)

   A spacing types — 12 points
   B spacing types — 10 or 9 points
   C spacing types — 8 or 7½ points
   D spacing types — 7 or 6 points

In the previous example, A spacing was selected for the copy. Most A types are 12 points in size, and since only $10\frac{1}{2}$ points per line could be allowed at A spacing, the type would be too large.

Example: Same copy, using B spacing for fitting copy to given copy area.
1. Total character count = 849 characters.
2. At B spacing, 23½ pica width would average 62 characters per line.
3. $849 \div 62 = 14$ lines.
4. 166 points (copy depth) $\div 14$ (lines) = 12 points per line.
5. Most B types are 10 points in size. Therefore, copy can be composed with a 10-point, B spacing type, using 12 points per line (2 points of leading).

Practice Exercise: Compose the following copy in a copy area 17 picas wide and 2½ inches deep.

These rare animals are not yet raised in sufficient quantity for pelting. They take their name from the Chinca Indians who wove the fur and made robes of the pelts. The Incas of Peru subdued the Chinca tribes and reserved the use of the fur for royalty. In recent years chinchillas were trapped so extensively in South America that they were near extinction.

The American chinchillas are descendants of the eleven South American 'chillas brought here 25 years ago by an American mining engineer working in the Andes Mountains. The little, cuddly bundles resist mass production, which explains why they are raised by small producers rather than on mass breeding farms, and, consequently, why they cost a veritable King's ransom for a coat of some 100 pelts.
FORMS TYPES

A forms type is any DSJ Vari-Typer type font with three characters added on a center metal strip called a “segment.” The characters on a segment consist of hairline rules, double hairline rules, bold rules, Scotch rules, dash and dot leaders, in various combinations.

There are ten different styles of segments available, identified by Roman numerals, as shown below. The top character on a segment is obtained without using a shift key; the middle character, by using the capital shift; the bottom character, with the figure shift.

<table>
<thead>
<tr>
<th>ACTUAL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TERMINOLOGY OF SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
</tr>
<tr>
<td>L.C.</td>
</tr>
<tr>
<td>CAP</td>
</tr>
<tr>
<td>FIG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARMY AND AIR FORCE FORMS</th>
<th>NAVY FORMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>VI</td>
</tr>
<tr>
<td>L.C.</td>
<td>Dot Leaders</td>
</tr>
<tr>
<td>CAP</td>
<td>Hairline</td>
</tr>
<tr>
<td>FIG</td>
<td>Blank (for tabulating)</td>
</tr>
</tbody>
</table>

| VIII                    | IX         | X          |
| L.C.                    | Dot Leader | Dot Leaders| Dot Leaders          |
| CAP                     | Dot Leader | Hairline   | Dot Leaders          |
| FIG                     | Dot Leader | Parallel Rule| Dot Leaders         |

All ten segments are available on A, B, C and D spacings. Leader lines should be placed on the same type used for the copy to be combined with the leaders. Segments with bold rules should be on A or B spacing types.
FORMS CONTROL LEVER

On the right side of DSIF Vari-Typers is a forms control box and control lever. When this lever is pushed to the left, the hammer strikes the segment in rapid, consecutive strokes, creating a continuous line of rules or leaders, depending on the segment being used. When the lever is pushed to the right a single segment stroke is produced. On each segment stroke the carriage moves 3 increments.

LINE CUT-OFF STOPS

Each DSIF is provided with a number of line cut-off stops which act as a stopping device when a continuous line is being ruled. A stop consists of a thumbscrew clamp that fits over the marginal scale at any desired position. The stop is effective only when the control lever is pushed to the left for automatic rules. It does not affect the movement of the carriage for other typing.

These stops are convenient to use when ruling numerous lines of the same length. Whenever it is necessary to continue a line beyond the cut-off stop, simply press the control lever to the right two or three times to pass beyond stop. Then continue automatic ruling by pressing lever to the left.

FORMS PLANNING SCALE

The Forms Planning Scale is used to pre-plot or plan a form. It is a flat, plastic ruler with four separate scales (one on each edge, front and back. The four scales correspond with the four horizontal spacings — A, B, C, and D.

Each division on the Forms Planning Scale is equal to one segment stroke (or 3 increments). These divisions are often called forms units.

The scale rests in a channel slot and is held in place with thumbscrews at each end of the scale. Thus, the scale can be easily removed or changed to conform with the horizontal spacing being used. As an added convenience, there is a regular pica scale or ruler the full length of the channel slot, making it easy to mark the planning scale according to inch or pica positions.

FORMS INDICATOR and CENTERING SCALE

The Forms Indicator is a plastic strip with a red hairline to indicate the position of the carriage in relation to the Forms or pica scale at any given time. The indicator is fastened to the machine by means of a curved bracket located right of the anvil. The arm of the indicator can be moved back and forth, and there is a thumbscrew near the base of the bracket. This is used to adjust the indicator to an exact position.

The Centering Scale is used to quickly center headings at any given position. Like the Forms Scale over which it slides, it consists of four separate scales — A, B, C, and D — to conform with the horizontal spacings of the machine. It also has a “0” (or center position) which may be aligned with any mark on the Forms Scale. Each division left of center (0) on the Centering Scale is equal to one-half of a division right of center (0).
Leader lines are very popular and useful in statistical reports, price lists, tables of contents, etc. They are used to lead the eye across the page from the first column to the proper row of figures in following columns on a table. The Forms Design Attachment of the DSI Vari-Typer makes it particularly easy to compose copy with dot or dash leaders.

Below is a sample of a Table of Contents page together with instructions in setting machine for composition of the table.

Set copy in a column 4 inches wide.

<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THIS MONTH</strong></td>
</tr>
<tr>
<td>Snag Boats on the Connecticut ........................................... 6</td>
</tr>
<tr>
<td>Shoreline Schools—Everybody’s Problem ................................. 8</td>
</tr>
<tr>
<td>Photographer Visits Faulkner’s Island ................................ 12</td>
</tr>
<tr>
<td>When Essex Got the Surprise of Its Life .............................. 14</td>
</tr>
<tr>
<td>Sea Winning in Battle with Out Tidal Marshlands ..................... 14</td>
</tr>
<tr>
<td>What Branford Owes to Father Gillette ................................ 17</td>
</tr>
<tr>
<td>Chester Churches United .................................................. 19</td>
</tr>
<tr>
<td>Lady Penwicke’s Final Resting Place ................................... 33</td>
</tr>
<tr>
<td>Sugaring Time .................................................................... 40</td>
</tr>
<tr>
<td>Salvage Job at Old Saybrook .............................................. 42</td>
</tr>
<tr>
<td><strong>EVERY MONTH</strong></td>
</tr>
<tr>
<td>Letters to the Editors ........................................................ 4</td>
</tr>
<tr>
<td>Shoreline Neighbors: Sam Witherill ....................................... 10</td>
</tr>
<tr>
<td>House of the Month: Meet the Lindsays of North Branford .......... 21</td>
</tr>
<tr>
<td>People in the News ............................................................. 26</td>
</tr>
<tr>
<td>With Rod and Gun .................................................................. 27</td>
</tr>
<tr>
<td>As We Were: Shoreline in the 1830’s ..................................... 28</td>
</tr>
<tr>
<td>Clap-Trap ......................................................................... 30</td>
</tr>
<tr>
<td>Shoreline Gardening ........................................................... 32</td>
</tr>
<tr>
<td>Almanac ........................................................................... 38</td>
</tr>
<tr>
<td>Homes Recently Sold ............................................................ 39</td>
</tr>
<tr>
<td>Editorial ........................................................................ 42</td>
</tr>
</tbody>
</table>

Compose copy at B spacing. Select B spacing type. Set machine at B spacing. Turn Forms Scale to B.

Use type with any of following segments: I, II, V, VIII, IX, or X

1. Insert paper with left edge 1/4" (3 marks on pica scale) left of “3” on pica scale.
2. Move carriage until forms indicator rests on “5” on pica scale. (Copy will be composed between “5” and “9” to obtain 4” width, with 2¼” margin on each side.)
3. Adjust Forms Scale (loosen end thumbscrews and slide to position) so that “80” on Forms Scale lines up with “5” on pica scale. This is the starting point of the leader line table.
4. Move carriage until forms indicator rests on “9” on pica scale. (It will also be on “137” on forms scale.) This is the end position of the leader line table.
5. Put a pencil mark on forms scale to indicate position of page numbers and end of leader line. There are two digits in the page number column, and each digit is equal to one forms unit (or 3 increments). Count back two forms units and place mark at “135.” To allow space between leader line and page numbers, mark “134” as end of leader line.
Leader Line Copy

6. Insert forms cut-off stop on marginal scale two marks left of "9" on scale. Notice that this is position of "134" in relation to pica scale.

7. Return carriage to starting point of table (80 on forms scale), put non-print key on non-print, press forms lever to the left, and allow carriage to move until cut-off stop stops it. Look at position of forms indicator. If it rests on "134" or left of it, leave cut-off stop alone. If indicator rests right of the "134" mark, move cut-off stop to left, and run test again. (When cut-off stop operates before intended end of line, an additional stroke or two may be added by pressing forms lever to the right.)

8. Mark center position of table on forms scale. There are 57 forms units in table width (80 to 137). One-half of 57 is 28½. Add 28½ to 80 to find center of table (108½). Mark 108½ on forms scale.

9. Line up "0" of centering scale on 108½ (center of table). Line up forms indicator on "0" of centering scale. Blind type main heading, using non-print key. Notice number of centering scale on which forms indicator stops. Return carriage to same number left of "0" and type heading (with non-print key in print position). Heading will be centered around 108½ of forms scale. Center first subheading in same manner.

10. Type first line of copy. Before typing leader line, look at position of forms indicator. If indicator is exactly on a line of forms scale, press forms lever to left, printing continuous automatic leader line. If indicator is not exactly on a line of forms scale, press 1/3 spacer once or twice until indicator does rest on line; then type leader line. Leader line must start on a line of forms scale to end on a line of scale and thus keep end of leader lines exactly straight or even.

11. After leader line is typed, space 3 increments to beginning of page number column, and another 3 increments to reach position of second digit (since page number of first line consists of only one digit which must be flush right with following page numbers). Type page number.


PERIOD LEADERS – WITHOUT FORMS ATTACHMENT

Leaders may be obtained on DSJ Vari-Typers not equipped with forms ruling attachment. There are two basic types of period leaders:—the solid leader line and the letterspaced leader line. Rules for typing each of these period leaders are listed below:

**Solid Leader Line**
(no space between dots)

1. Type copy line.
2. Return carriage to starting point.
3. Space over copy with space bar (or with period, using non-print key) until ribbon shield pointer is beyond copy. Type leader line.
4. Type all lines in above manner and ends of leader lines will be even.

**Letterspaced Leader Line**
(space between dots)

1. Type copy line.
2. Return carriage to starting point.
3. Space over copy with "m" key (on non-print or with no type in anvil) until ribbon shield pointer is beyond copy. Type leader line.
4. Type all lines in above manner and ends of leader lines will be even.
Forms Composition

A form consists of copy, horizontal rules, and, usually, vertical rules. It is important, first, to learn how to compose the ruled lines; then to combine these rules with copy.

HORIZONTAL RULES

Horizontal rules are composed first. Locate starting and end positions of rules on forms planning scale. Then insert a left marginal stop for beginning position of line and a forms cut-off stop for end position of line. Rule the required number of lines for form.

VERTICAL RULES

Alignment:

1. Place pencil marks outside of form to indicate position of vertical rules. Insert paper lengthwise in machine.
2. Line up ribbon shield pointer in center of one of the horizontal rules (now vertical in the machine).
3. Turn feed rolls and watch ribbon shield pointer in relation to ruled line.
   a. If pointer moves to right of ruled line, right side of paper is too low.
   b. If pointer moves to left of ruled line, left side of paper is too low.
   c. Straighten paper.
4. Roll form down in machine until just the tips of the horizontal rules show above alignment guide (when paper is pressed against the guide).
5. Move carriage until ribbon shield pointer is left of first (left) rule. Try single stroke of line. See if it is in correct vertical position to join all the horizontal rules. (This test stroke can be removed later by erasing or whiting it out.) If test rule is not in correct position, adjust paper up or down in feed rolls until test stroke is correct.

Starting and Stopping Vertical Rules:

1. Move carriage until ribbon shield pointer is right of first rule. Try single forms stroke. Stroke should join first rule. If it does not, back space 4 increments (3 for width of stroke made and 1 more to bring forms stroke closer to rule). Try single forms stroke again. If it still does not join rule, repeat procedure. When you have found correct joining position, mark this position on forms planning scale or marginal dial.
2. Rule line until close to last horizontal rule. If end of ruled line appears to be less than one forms stroke away from horizontal rule, back space 1 increment and try single forms stroke. If it does not join the horizontal rule, keep repeating procedure until vertical rule joins last horizontal rule.
3. Locate positions of other vertical rules and rule remaining vertical lines.
4. For last (outside) vertical rule, see that edges of horizontal rules just touch alignment guide. If this rule is near the edge of paper and paper no longer is held by feed rolls, turn paper around to rule last vertical line.

Practice Exercise: Use a type with Segment, I, II, or IX (and spacing)

1. Rule ten 6" lines horizontally. Use double rule (Figure shift) for first two horizontal rules.
2. Rule lines 24 points apart.
3. Place vertical rules on outside edges of form and other vertical rules as follows:

   Outside rule = 1" - rule = 3/4" - rule = 1/2" - rule = 1/4" - rule = 1" - Outside rule

DIAGONAL RULES

Diagonal rules may be obtained in a similar manner to the method used for vertical rules. First compose all horizontal and vertical rules. Then turn paper at angle desired for diagonal rules, lay a ruler across paper at same angle and mark two reference points. Insert paper in feed rolls and align reference points against alignment guide and rule diagonal lines.
**Form Composition**

**Forms Planning**

A form, like any other kind of composition job, must be completely planned before it is composed. Below is a simple form in rough, pencil draft. This is the way most forms are presented to the *Vari-Typist*. Follow the planning and composition instructions given below the form. The experience gained from composing this practice form will enable you to compose whatever forms you encounter in your own office.

**Spare Parts**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tbody>
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</table>

1. **Horizontal Planning**

A. Remove the *Forms Planning Scale* from machine. Turn scale to “C” edge and place it on pencil draft of form.
B. Mark the scale with a pencil to show the following positions:
   1. Left side...........50
   2. Vertical rules........64, 78, 140, and 154
   3. Right side...........160
   4. Center of form........105 (160–50 = 110 units; 1/2 of 110 = 55; 50 + 55 = 105)
C. Slip Centering Scale over Forms Planning Scale with “C” on one scale matching the other. Place both scales back in machine and tighten thumbscrews.

2. **Vertical Planning**

A. Measure length of form. (4¼” excluding main heading). Convert into points. (4¼ x 72 = 306 points.)
B. Count the number of ruled lines. Form has 18 lines or 17 spaces between lines.
C. Find the number of points between ruled lines. 306 ÷ 17 = 18 points between ruled lines.
D. Place 8 points of space below main heading and above top rule.
E. Use 660-8C type for boxed headings. Headings are to be composed in capital letters. The size of this type when all capital letters are used is 6 points (See chart on next page). Subtract 6 from 18 point depth of box. Balance is 12 points of white space to be distributed equally above and below headings. After composing top rule, move down 12 points to compose boxed headings (6 points of white space plus 6 points for height of type). After headings are composed, move down 6 points for second ruled line.

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3. Setting Machine

A. Insert paper so that left edge of paper is 3/4" (9 marks on pica scale) left of starting point (50 on forms planning scale). This will center form on 8½" page width.

B. Set left marginal stop, bank carriage, press 1/3 spacer once or twice, and adjust forms indicator so that it rests exactly on 50 on forms scale.

C. Set forms cut-off stop to stop lines at 160 on forms scale (or one or two forms strokes left of 160). Test stop, using forms lever and non-print key.

D. Set machine at C spacing.

4. Centering Main Heading

A. Move carriage to center of form (105) on forms scale.

B. Insert heading type. Use 660-10B or other sans-serif, B spacing type. Leave machine set at C spacing. Heading will be letterspaced, so it may be composed without changing spacing. Allow 2 increments between letters and 6 increments between words.

C. Move “0” of Centering Scale to center of form (105 on forms scale).

D. Put non-print key on non-print and blind type heading, letterspacing as described in Step 4-B. Forms indicator will stop on 15 of Centering Scale.

E. Move carriage back to 15 left of “0” on Centering Scale.

F. Move non-print key to print position and type heading.

5. Ruling Top Line

A. Set linomatic lever to 8 points and move lever to right to feed paper 8 points.

B. Using Segment III, cap shift, rule top line (one-point rule) from 50 to 160. (Instead of Segment III, you may use double rule—fig. shift of Segment I, or any suitable distinctive rule.)

6. Centering Boxed Headings

A. Change linomatic lever setting to 12 points (to allow white space above heading plus height of heading type).

B. Insert 660-8C type.

C. Set “0” of centering scale at center of first box (57). First box extends from 50 to 64 on forms planning scale. 64—50 = 14 forms units. One-half of 14 is 7. Beginning of box (50) + 7 = 57.

D. Blind type first heading, “NUMBER.” Forms indicator will stop at 6 on centering scale.

E. Move carriage to 6 left of “0” on centering scale.

F. Move non-print key to print position and type heading.

G. Set “0” of centering scale at center of second box (71). (78—64 = 14. One-half of 14 = 7. 64 + 7 = 71.)

H. Blind type second heading, “ITEM.” Forms indicator will stop at 3½.

I. Return to 3½ left of center, move non-print key to print position, and type heading.


K. Blind type third heading, “DESCRIPTION.” Forms indicator will stop at 9½ on centering scale. This can be called 10 for centering purposes.
6. Centering Boxed Headings (Cont'd.)
   L. Move carriage to 10 left of center, move non-print key to print position, and type heading.
   M. Set "0" of centering scale at center of last box. (150). Last box extends from 140 to 160. (160-140 = 20.
      One-half of 20 = 10. 140 + 10 = 150.)
   N. Blind type last heading, "PRICE." Forms indicator will stop at 4½.
   O. Move carriage to 4½ left of center, move non-print key to print position, and type heading.

7. Ruling Second Line
   A. Change linomatic lever setting to 6 points and move lever to feed paper up in machine.
   B. Using Segment III, cap shift, rule second line (one-point rule).

8. Ruling Remaining Horizontal Lines
   A. Set linomatic lever for 18 point spacing. Push feed lever to feed paper up in machine.
   B. Rule hairline, using Segment I, cap shift.
   C. Rule 15 more hairline rules (16 in all) 18 points apart.

9. Ruling Vertical Lines
   A. Remove forms planning scale from holder and place it over form so that left edge of form lines up with
      50 on C scale and 160 on C scale lines up with right edge of form.
   B. Using a blue pencil, mark a thin, short line at 64, 78, 140, and 154 on the form. (Form has no outside
      rules on left and right edges.)
   C. Insert form lengthwise in machine and straighten paper so that vertical rules will be at exact right
      angle to horizontal rules.
   D. Roll paper up until first blue pencil line lines up with alignment guide.
   E. Rule vertical line, using hairline rule (cap shift of Segment I).
   F. Repeat procedure for remaining vertical rules.

CENTERING ON PRE-RULLED FORMS
1. Horizontal Centering
   1. Move carriage until center of ribbon shield pointer rests exactly on first vertical line of box.
   2. Put non-print key on non-print and blind type heading.
   3. Using space bar or 1/3 spacer, space until center of ribbon shield pointer rests exactly on second
      vertical line. Count the number of increments as you space to line.
         Example: 22 increments left after typing heading.
   4. Return carriage until center of ribbon shield pointer rests exactly on first line.
   5. Put non-print key on print.
   7. Space two more increments and type centered heading.

2. Vertical Centering
   1. Measure the depth of the ruled box in points. Example: 24 points.
   2. Subtract the point size of the type (in caps). See chart on page 40.
      Example: 730-10B type = 7 points (in caps), 24 - 7 = 17 points of white space.
   3. Divide the remaining space equally above and below heading.
      Example: 17 points ÷ 2 = 8½ points above and below heading.
   4. Line up top rule of box exactly on alignment guide.
   5. Move down the number of points above heading plus the point size of type (in caps). Type heading,
      Example: Move down 8½ points + 7 points or a total of 15½ points. Type heading.
Removable Code Bars - Language Coder

In every DSJ or DSJ Vari-Typer is a set of code bars which control the number of increments each character of the keyboard takes during the typing operation. The Increment Chart on page 9 lists the increment values of all characters on English types. Early DSJ and DSJF models were restricted to this one increment coding arrangement, because the code bars were built into the machine and could not be changed. This created a problem in the designing of many foreign type styles, because the basic alphabets of many foreign languages vary to such an extent that they could not be adapted to the same increment pattern of English types.

Present DSJ and DSJF models have removable code bars. A set of code bars is usually referred to as a coder. Thus, most machines are equipped with an English Coder for English types, but this coder can be easily removed and replaced by a variety of other coders, such as a French-Canadian Coder, Spanish Coder, French-Italian Coder, etc., depending on the type being used. When ordering foreign language types, be sure to purchase the proper coder for the type selected.

REMOVING THE CODER
1. Remove front cover.
3. Lift the "bails" that rest on the code bars.
4. Lift out the coder, using the curved brackets on each side of coder.

INSERTING THE CODER
1. Place coder in machine. Press down on curved brackets until coder snaps into position.
2. Drop the bails over the code bars.
4. Replace front cover.

CAP and SMALL CAP CODER

In addition to the many foreign language coders, there is another coder available which greatly increases the scope of Vari-Typer composition. This coder is called the Cap and Small Cap Coder. With this coder you can use any of the Cap and Small Cap types which have been designed for the DSJ. One popular series of Cap and Small Cap types is the Copper Plate Gothic Series, known also as the 2000 series. There are 12 sizes of this design, 3 sizes in each of the four horizontal spacings, and each type has 2 sizes of capital letters. These types are ideal for forms composition. The smaller sizes are especially popular, because they enable you to fit more copy into a smaller amount of space.

Other Cap and Small Cap types are also available in serif designs, such as the Bodoni Book style, and the Garamond style. These designs are popular for programs, column headings on price lists and other tabular material, business cards, and a variety of special uses.

When using the Cap and Small Cap Coder, the large capitals take the same number of increments as the capitals of any type — 4 increments, except for I, S, and L. The small capitals, however, take 3 increments — except I (2) and W and M (4 each). Thus, copy composed in small capitals requires less space than that composed in the large capital letters.
Type Selection

Type selection is one of the most important factors in effective composition. Contrary to popular belief, it is not merely a matter of taste or opinion. There are numerous controlling factors in type selection. Four of these factors are listed below, in order of importance:

1. **Method of Reproduction To Be Used.** Some types reproduce better by one duplicating process than by others. It is always advisable to test the types selected on a sample master—a few lines with each type are sufficient.

2. **Area of the Final Composition.** If the size of the reproduced copy is to be small, smaller types will be best. If the reproduced copy is to be large, larger types and wider spacings may be necessary.

3. **Amount of Copy in the Composition Area.** If a large amount of copy must be placed in a small area, smaller types must be used. Learn to balance the copy and white space. Avoid using small types with too much white space or large types with too little white space.

4. **Desired Style Effect.** The purpose and nature of the composition govern the style selection. The chart at left provides a guide in selection of type style.

### BASIC DESIGN VARIATIONS

The foremost aim of any composition is **readability.** To understand how proper type selection affects readability of copy, you should understand some of the basic differences in type design. The most important difference lies between **Serif Designs** and **Sans-Serif Styles.**

1. **Sans-Serif Types.** A sans-serif type is one that is perfectly plain, consisting of just enough strokes to form the letter.

   **THIS IS A SAMPLE OF A SANS-SERIF TYPE.**

   **THIS IS A SAMPLE OF A SANS-SERIF TYPE.**

2. **Serif Types.** A serif type is one that has the strokes necessary to form the letter **plus extra**, decorative lines called **serifs.**

   **THIS IS A SAMPLE OF A SERIF TYPE.**

   **THIS IS A SAMPLE OF A SERIF TYPE.**

Serif types are much easier to read than sans-serif styles. The serifs on the type help to inform an impression of the word more quickly and make these styles much easier on the eyes. For this reason, serif styles should always be selected for lengthy text matter, such as books, magazines, newspapers, etc.

Sans-serif styles are particularly effective as headings or subheadings or for forms and statistical listings. They may also be used for short amounts of text matter, such as a descriptive paragraph in an advertisement.

### CONDENSED AND EXPANDED STYLES

Among available **DSJ** types are some condensed and some expanded styles. An expanded style is one that is set at a wider spacing than is normal for its point size. An example of an expanded design is the Modern Roman (one size is 10 point at A spacing). Such styles are advisable to use when there is a small amount of copy to place in a large copy area. Condensed styles are those which are set at a smaller spacing than is normal for its point size. Some examples of these styles are the 850-10C (Bookman), 860-10C (Alexandria), 690-10D (News Gothic Condensed). These styles are particularly useful when a large amount of copy must be placed in a small area.

**...**

These are only some of the factors in type design and selection. The advantages of Cap and Small Cap types have been described on page 42. There are many styles available for your **DSJ** composition. Observe type styles used in all kinds of printed literature—magazines, newspapers, advertisements, etc. With careful study and composition experience, you will find type selection both simple and interesting.
Care of VariTypewriter

The care given any machine or mechanical device will have a direct effect on the quality of work it produces. The mechanism of the DSJ Vari-Typer is no more sensitive than other precision-built office machines, but, like all others, requires specific methods of cleaning and care.

CLEANING

There are eight parts of the machine which should be cleaned daily to insure proper operation. The best time to clean the machine is in the morning before starting the day’s work. The entire cleaning procedure can be accomplished in less than five minutes and is well worth the time, for a clean machine will give you clean and attractive copy.

These are the eight parts which should be cleaned daily:

1. Feed rolls and paper basket.
2. Forms planning scale and alignment guides.
3. Types and anvil
4. Ribbon shield and carbon ribbon feed

The best cleaning fluid for the DSJ Vari-Typer is denatured alcohol. This is the fluid that should be used for the best results. If it is impossible to obtain denatured alcohol, carbon tetrachloride may be substituted. No other cleaning agent should be used.

1. Feed Rolls and Paper Basket.
   1. Always leave feed rolls open when machine is not in use.
   2. Each morning, close feed rolls and rub them thoroughly with a cloth that has been dampened with denatured alcohol. Rotate feed rolls while rubbing them.
   3. When feed rolls are properly cleaned, they should have a dull finish.
   4. Wrap cloth around end of split wooden roller and slide roller through basket to remove all dust and carbon particles.

2. Forms Scale and Alignment Guides.
   1. Rub back of forms planning scale lightly with cloth.
   2. Reach behind paper table and rub cloth along alignment guides.

3. Types and Anvil.
   Type fonts should be cleaned immediately after use, so they are ready for the next composition job.
   1. Rub the back of the type thoroughly with a cloth dampened with alcohol. (Most of the dirt on a type collects on the back.
   2. Occasionally (about once a week), clean the face of the type. Dip a type brush in denatured alcohol and brush surface of type briskly. Dry the type immediately with a dry cloth.
   3. Never soak types in alcohol or other cleaning agent.
   4. Fold a 3” x 5” card lengthwise and insert fold in anvil slot. Run it back and forth in slot several times and around on sides of anvil.
   5. Turn anvil around and clean other side of anvil in same manner. Use a new card or the same card folded with soiled fold in. (A sheet of paper folded twice may be substituted for card.)
   6. Clean outer surface of anvil with cloth dampened with alcohol.
   7. When replacing types in type drawer, place them carefully in slot. Careless handling may cause web to bend and result in type “sticking” in anvil.
   8. If type sticks in anvil after both anvil and type are perfectly clean, contact the nearest service representative. Do not attempt to bend or adjust type yourself.
4. Ribbon Shield and Carbon Ribbon Feed.
   1. Remove ribbon shield from shield holder and rub both sides with cloth dampened with alcohol.
   2. Replace shield on holder. Be sure it is properly in place—all the way down on holder.
   3. If shield becomes damaged around window opening, replace with new shield. A damaged shield may cause frequent ribbon breakage, shield marks around letters, or carbon flaking on copy.
   4. Brush the grooves in both wheels of carbon ribbon feed. A dry brush will usually clean the wheels sufficiently. Occasionally clean wheels with brush dampened with alcohol and dry with cloth. Hold a piece of paper under wheels while cleaning to prevent carbon from dropping into machine.

LEAVING MACHINE AT NIGHT

When machine is not in use, leave it in following condition:
   1. Feed rolls open. (Never leave work in machine overnight.)
   2. Set horizontal spacing lever to D (smallest spacing). This relieves tension on spring.
   3. Set impression lever at 1 impression.
   4. Remove types and unlock type change key, allowing anvil to drop into place.
   5. Cover machine.

ELECTRIC CURRENT

Most Vari-Typer models are equipped with a Universal 110-volt motor, which will operate on AC or DC current. For 220-volt current a 220-volt motor must be used.

Any Vari-Typer having a Forms Ruling attachment will operate only on 110-volt, 60 cycle, AC current. A converter is required if such a machine is to be used with DC current. If the machine is used with 220-volt, 60 cycle AC current, a transformer must be used.

When a Vari-Typer is to be used near electronic equipment, the motor may be shielded to eliminate interference with other equipment.

The Vari-Typer does not use electric current constantly (except when Forms Ruling Attachment is in operation). While typing you will hear a slight “whirring” sound after every 19 strokes on the keyboard. This sound is the winding of a tension spring that gives the machine mechanical power for the next 19 strokes. Thus electrical power is used only at intervals during the typing process.

Always be sure that the machine is plugged in when you begin to type. If the machine happens to be disconnected when you start to type, you may be able to type several characters before noticing any difference in operation. When the mechanical power is exhausted, the machine will stop. If this happens, always check to see if machine is plugged into an electric outlet. Also check the outlet to be sure that it is operating properly.
# Care of VariTyper

## OPERATION CHECK LIST

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If machine stops during type operation —</td>
<td>1. Check to see if machine is plugged in.</td>
</tr>
<tr>
<td>2. If letters appear too crowded —</td>
<td>2. Check to see if horizontal spacing lever is set at correct spacing for the type.</td>
</tr>
<tr>
<td>3. If letters are irregularly spaced —</td>
<td>3. Check Standard—Differential Lever. Lever must be in for differential type (style numbers of 600 or above).</td>
</tr>
<tr>
<td>4. If copy is too light —</td>
<td>4. Set impression lever to heavier impression setting. Check ribbon. Be sure it is moving through machine.</td>
</tr>
<tr>
<td>5. If type sticks in anvil (does not return to center after a letter is struck) —</td>
<td>5. Clean outside of anvil and anvil slot. Clean back of type.</td>
</tr>
<tr>
<td>6. If feed rolls appear shiny or glossy —</td>
<td>6. This is usually a result of improper cleaning. Clean feed rolls thoroughly with cloth dampened with denatured alcohol. Rub well until rolls show a dull finish.</td>
</tr>
<tr>
<td>7. If paper slips in feed rolls —</td>
<td>7. Clean feed rolls thoroughly. If paper continues to slip, have rolls adjusted by service representative.</td>
</tr>
<tr>
<td>8. If plates slip in feed rolls —</td>
<td>8. Some plates slip in rolls more easily than others. Apply a narrow strip of draftsman’s masking tape to the back of each vertical edge of plate. Do not put tape in typing area of plate.</td>
</tr>
<tr>
<td>9. If machine does not justify.</td>
<td>9. Check actuating bar lock. Pull lever out.</td>
</tr>
<tr>
<td>10. If ruled lines do not join when using forms ruling attachment —</td>
<td>10. Check horizontal spacing lever to see if it is set at correct spacing for segment type being used.</td>
</tr>
</tbody>
</table>