

**QUARtermaster  
CORPS MANUAL**

**QMC 14-2**

**Use and Care  
of Office Equipment  
and Supplies**



**ARMY SERVICE FORCES  
OFFICE OF THE QUARtermaster GENERAL**

**FEBRUARY**

**1945**





ARMY SERVICE FORCES  
Office of the Quartermaster General  
Washington 25, D. C., 14 Feb. 1945

Quartermaster Corps Manual QMC 14-2 is published for the information, guidance, and compliance of all concerned.

E. B. GREGORY  
Major General  
The Quartermaster General

---

NUMBERING SYSTEM OF QUARTERMASTER CORPS MANUALS

Each manual is identified by the symbol of the originating agency, as given below, followed by a number indicating the numerical sequence of the manual; i.e., QMC 22-1 identifies the first manual prepared by Service Installations Division.

	<u>BASIC PUBLICATION</u> <u>CONTROL SYMBOL</u>		<u>BASIC PUBLICATION</u> <u>CONTROL SYMBOL</u>
Executive Office	QMC 11-	Organization Planning and Control	QMC 19-
Fiscal Division	QMC 12-	Personnel Division	QMC 20-
Fuels and Lubricants	QMC 13-	Procurement Division	QMC 21-
General Administrative Services	QMC 14-	Service Installations	QMC 22-
International	QMC 15-	Storage and Distribution	QMC 23-
Memorial	QMC 16-	Subsistence	QMC 24-
Military Planning	QMC 17-	Headquarters, Quartermaster Inspection Service	QMC 25-
Military Training	QMC 18-	Market Center System	QMC 26-

"USE AND CARE OF OFFICE EQUIPMENT AND SUPPLIES"

Prepared by  
Civilian Training Section  
Personnel Division  
Philadelphia Quartermaster Depot  
November 1943

Due to the drastic reductions in available office supplies, the unavailability of new typewriters and other office machines, it becomes necessary for the Philadelphia Quartermaster Depot to launch a Depot-wide conservation program.

Economy in any government office cannot be over-emphasized. Economy should be stressed in peace times as well as war time. Consequently, this is a program which is of inestimable value to all branches of the Depot at all times. This little booklet is presented as a means of giving helpful aids and suggestions in furthering the effectiveness of such a conservation program. Some of the critical supplies are listed below and suggestions for their conservation given.

#### A. PAPER

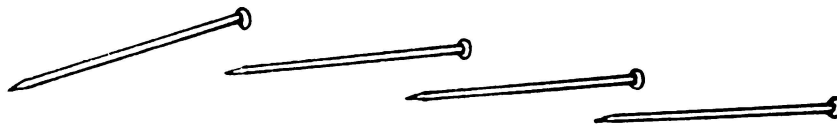
It is commonly believed that paper is plentiful, and that its supply is unlimited. The facts indicate, however, that there is a definite shortage of paper and increased diversion of the essential products used in the manufacture of paper, such as paper pulp, chlorine, etc. Conservation practices in the use of paper need to be continued, and new emphasis put upon practices which will result in greater conservation. Even in cases where the supply is not critical, the increase in present market prices makes it imperative that conservation be practiced.

#### Suggestions

1. Use the correct and most economical grade and size of paper for each job.
2. Plan forms and reports so that they may be reduced in size to bare necessity.
3. Prepare only essential reports.
4. Reduce the number of copies of essential reports that are made, if possible.
5. Prepare only the necessary number of copies of letters.
6. Eliminate unnecessary letters of transmittal.
7. Prepare rough drafts on inexpensive or partly used paper when material is to be corrected and re-typed.
8. Old cards may be turned over and used on the opposite side.
9. Use file folders more than once by turning them inside out.
10. Use every line and both sides of the pages in your shorthand notebook.
11. Circular letters, forms, obsolete letterheads, memorandum sheets, backs of spoiled sheets, reports and miscellaneous papers that are used only on one side should be saved and either used in the office or sent to the store-room for padding into scratch pads.

12. Use both sides of each sheet wherever possible.
13. Permit tolerances in possible corrections on final copies where the meaning may not be changed.
14. Slight corrections on final copies should be made in ink rather than retyping.
15. Use carbon copies in sending identical letters or memorandums in order to avoid sending an original to each person or office.
16. Use ordinary bond paper rather than letterhead for interoffice communications.
17. Use a letterhead (8 x 5½) for writing short letters.
18. Eliminate special letterheads.
19. Use file folders over and over again by using labels to cover the names by refolding or by repairing tear with gummed tape.
20. Use longhand notations on letters to avoid dictating and typing a letter or special memorandum.
21. Use plain bond paper for additional pages on long letters rather than letterheads.
22. Economize on paper through use of brevity in your letters and writings.
23. Store all paper supplies in a level dry place.
24. Order only the needed number of copies of reproduced letters, notices, etc.
25. Keep paper in storage to protect it from dust and dirt.
26. Use scratch pads of waste paper for making notes and office memorandums.

B. PINS



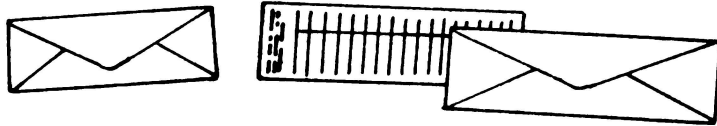
1. Use pins sparingly and only when necessary.
2. Salvage pins on incoming letters and memorandums for reuse in your own office.
3. Pick up stray pins and deposit in a suitable receptacle in your office for later use.

C. PENS



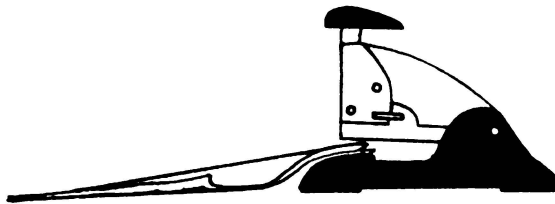
1. Lengthen the life of pens by cleaning them after use. Pens are made of valuable steel and need to be conserved.
2. Avoid jabbing pen points, thereby damaging them so that their use is impaired.

D. ENVELOPES



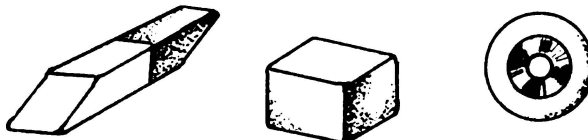
1. Use small size envelopes for mailing letters written on small-size letterheads.
2. Use interoffice communication envelopes for interoffice correspondence and memorandums. Do not throw these envelopes away but save and use them over and over again.
3. Salvage envelopes that can be reused for other purposes.

E. STAPLES



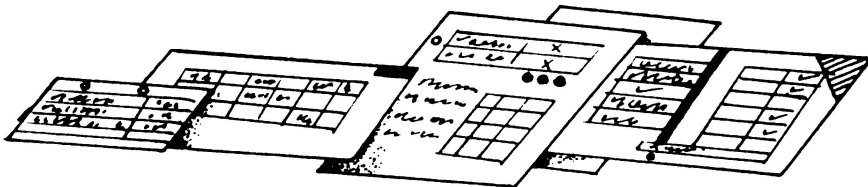
1. Use staples instead of paper clips for permanent filing.
2. Use but one staple unless absolutely necessary to use more.
3. Do not waste staples by stapling materials that are too hard or too thick for the staples to penetrate.

F. ERASERS



1. Use erasers sparingly and keep them in a place where they will not deteriorate unnecessarily. Keep them from excessive heat, chemicals, etc.

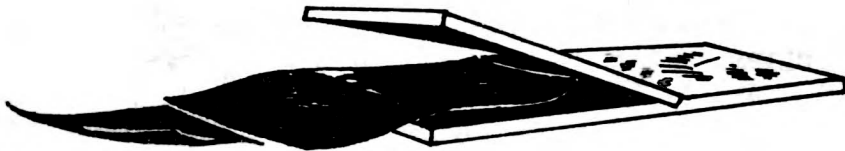
G. FORMS



1. Review all forms periodically as to their essential use, their consolidation with other forms, elimination of waste space, standardization of sizes and colors, and minimizing the number of copies to be prepared.

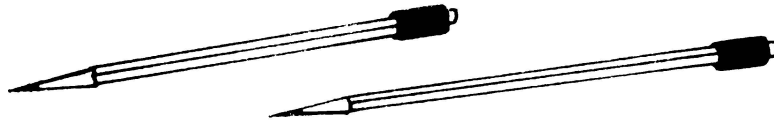
2. Plan forms so that there will be a minimum of punching and numbering.
3. Use white paper whenever possible, thereby eliminating the more expensive colored papers.
4. Study carefully the processes of reproduction to be used. When large numbers are needed, offset duplicating or printing will be less expensive but on small runs, mimeographing or other simple office processes may be adequate.

#### H. CARBON PAPER



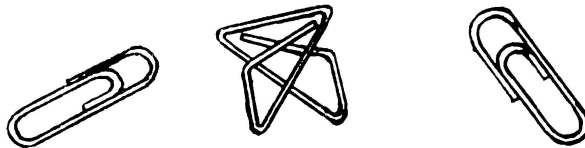
1. Use carbon paper repeatedly until legible copies cannot be obtained.
2. Once used carbon paper from fan-fold, or similar types of forms, should be reused when possible.
3. Turn the carbon paper each time it is used (top for bottom) so that the impression does not come at the same place each time.
4. Exchange carbon for different types of jobs to distribute the wear.
5. Hectograph carbon may be used a number of times. Unused portions should be saved for future use.
6. Keep typewriter platen and type face in good condition so that carbon copies will not be unnecessarily "chewed up".
7. Use care in handling carbon sheets so as not to smudge the carbon or crease it. To pick up, place thumb and forefinger on the paper at one of the corners on the uncarbonized side bringing them together so that the paper folds sufficiently to enable the operator to pick it up.
8. Guard against unnecessary wrinkling and tearing of carbon sheets.
9. Insert and remove carbon copies with care. Building carbon packs for a number of copies by first inserting the paper in the machine is a good practice.
10. Keep carbon paper neatly stored in folders to avoid damage to the carbon.
11. Carbon sheets should never be placed face down on top the desk. Such a practice results in damage to the carbon through picking up dust and grit from the desk top and soils the desk as well.
12. Used carbon should be placed to the front of the multiple pack and new carbon should be placed to the back of the pack to obtain best uniform results.

I. PENCILS



1. Care should be used not to break pencil points nor use them on rough surface which will wear them unnecessarily.
2. Use care when sharpening pencils not to "sharpen them away."
3. Use mechanical pencils when available.

J. CLIPS

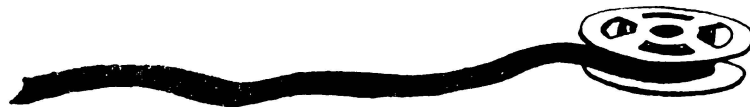


1. Use paper clips sparingly and remove them before filing papers.
2. Remove paper clips from all papers to be thrown away.
3. Use staples for attaching papers together for permanent filing.

K. RUBBER BANDS



1. Use rubber bands with great care since the supply is definitely limited. They will be almost impossible to obtain in the future.
2. Remove rubber bands before discarding material. Use them repeatedly.



L. TYPEWRITER RIBBONS

1. Reverse the ribbon on the reels to increase its life.
2. Ribbons of a solid color should be reversed from time to time so that the ribbon may be used uniformly on top and bottom.

3. Use a solid-color ribbon unless two colors are absolutely necessary.
4. Return old ribbons to the supply room for reinking.

#### M. GENERAL

1. Clean out your desk and storage cupboards. Remove all unneeded and excess supplies and return them to the supply room.
2. Order only enough supplies for correct use.
3. Do not discard anything that can be possibly used by either yourself or others in the office.
4. Surplus supplies and materials may be exchanged for supplies and materials that can be used currently.
5. Use all supplies with same care that you would if you were paying for them yourself.

#### N. SALVAGE

1. Salvage all paper that can be used on the opposite side.
2. Return empty ribbon spools, carbon paper boxes, folders, and cardboard backs from padded forms to the supply room.

### CONSERVATION OF MACHINES

#### A. Typewriter

The manufacture of typewriters has ceased for the duration. The typewriter you have now must last for an indefinite time and its "life" will depend entirely upon how you use and take care of it. The life of a typewriter can be definitely lengthened through intelligent use and care.

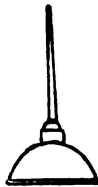
Care of machine



1. A few minutes each day should be spent in brushing out your typewriter and cleaning the type. Use a dry brush to clean the type. Liquid type cleaner runs down the sides of the type bars, softens the type bar pad with constant use, and causes the type bars to stick.



2. On the Royal, do not brush out the dirt in the type-bar segment, since the dirt will get into the slots where the type bars move, thus causing the type bars to stick. If the type bars should stick, drop a little oil in the type-bar slot. Work the type bar up and down until it works freely. When the repair man is available, ask him to remove the dirt.
3. Before requesting the services of a repair man always check the typewriter to see if everything is in its normal operating position, that is, ribbon on correctly, ribbon switch on black or blue indicator, card attachments in the right position, bail rolls placed properly, etc.



4. A few suggestions for oiling and caring for the typewriter: On all typewriters, oil the carriage rails—or carriage raceway. On the Remington Noiseless, Woodstock, and Remington Standard, oil the margin bar, which is directly back of the paper table. On the Underwood, where the stops are set from the front of the machine for the left stop, oil the round rod that the margin stop slides on; on the right-margin stop, oil the same rod that the margin stop slides on, but also oil the second bar that supports the right-margin stop. This round bar is back and directly below the plate on which the two-color margin scale is fastened. On the Underwood, it is very important to oil these margin stop rods—it will also save the service man a trip. Oil the wayrod—the round rod the carriage moves on.
5. On the Underwood typewriter, there may come a time when the operator presses the tabulator bar, and the carriage barely moves. If this should happen, do this: (a) Tilt the machine up on its right side, (b) drop some oil on the long flat piece of metal that extends from the right to the left side of the carriage. Note: This flat piece of metal is about  $\frac{1}{4}$ " wide and is secured to both ends of the carriage directly below and back of the paper table (this can also be identified by the fact that it will slide about 1 inch to the right or left by pushing it with the fingers). (c) Hold the tabulator bar down and move the carriage to the right and hold the left until the oil has been distributed.

6. On the noiseless typewriter, it is very important to oil the carriage rail; this is located directly below and back of the margin stop bar. Lack of oil on this particular part will cause the carriage to drag and run slow. There is no definite rule as to when machines should be oiled as circumstances under which one works govern the oiling of the machine. Do not use too much oil—use only enough to take care of the needs of the machine.
7. If a pedestal desk is used, be sure the pedestal is tight at all times as this will affect the operation of the machine. A loose pedestal causes skipping and crowding of the letters. To tighten a loose pedestal desk, a wooden stick 1 inch by 2 inches, 25 inches long can be placed under the pedestal.
8. Never use a felt pad under the machine unless the machine is fastened to the desk. There is danger of the machine slipping off the desk. A felt or rubber pad is not necessary on the new typewriters because the machines are closed in and also lined with felt on the inside of the main frame plates and top cover.
9. When in doubt about your typewriter, call Extension 3492 or 4455 and request the services of a repair man. Do not attempt to make your own repairs.
10. Do not use pins or other metal instruments to clean the type.

#### SUGGESTIONS

1. Securely fasten and safely place your typewriter to protect it from falls or knocks. This is especially important today since it is almost impossible to replace broken typewriter parts.
2. Safeguard the rubber roller (platen) from undue wear and abuse by typing with at least two sheets of paper inserted into it.
3. Keep your machine clean.

##### What to do in the morning

- a. Push carriage to extreme left and wipe the upper and lower carriage rails with a clean dry cloth. Push the carriage to the extreme right and repeat the same operation.
- b. Brush dust off the typewriter.
- c. Brush out dust shields and troughs in front and below the platen.

- d. Brush type-bar bearings and wipe the slots in the curved metal framework in which the type bars move.
- e. Clean the type with a dry bristle brush. If this is done daily there will be no need to use type cleaning fluids which are harmful to the machine, especially the platen and rollers.

What to do once a week.

- a. Clean and oil the carriage rail. One drop is enough.
  - b. Use a cloth moistened with a little oil to wipe over the machine including the nickel rods behind the paper table or deflector.
  - c. Clean the platen with denatured alcohol. By following this procedure the paper will be kept from slipping when inserting it into the roller. Never use benzine or gasoline since these liquids are harmful to the rubber parts of the machine.
  - d. Oil platen bearing. One drop is sufficient.
4. It is important that you cover your typewriter every night.
  5. When erasing, keep particles from falling into the type bars by moving the carriage to the extreme right or left. This is important and if followed diligently will eliminate almost entirely such disturbances as slow-acting type bars, stick-of type bars, poor type alignment, and piling of type.
  6. In moving the typewriter, do so by grasping it firmly underneath the frame. Never move the typewriter or carry it by the carriage.
  7. Simplifying the problem for others by: (a) providing an extra carbon of a letter or memorandum for handwritten notations and return: (b) using form letters or post cards with standard replies for checking: (c) replying promptly to correspondence to obviate the necessity for follow-up.
  8. Controlling the use of typewriters for personal and non-business purposes.
  9. Good typing demands rhythm and exact even cadence or force of stroke. Both can be cultivated more easily by touch typewriting than by sight writing. An even cadence or force of strokes saves time, produces better work and less errors.
  10. Fast typing is spectacular, but a good typist should type as rapidly as she can type accurately.
  11. Avoid pounding on the typewriter keys. Typewriter keys on the average manual machine are manufactured to operate with a 6 to 8 ounce touch. Research indicates that the average typists exerts enough pressure on each type bar equal to a

12 to 14 pound stroke. Conserve energy by learning to type smoothly and with only sufficient pressure to activate the keys. Pounding on the typewriter keys causes battered type and poor copies.

12. When electrically operated machines are not actually being used, disconnect them or turn off the switch on the machine.
13. Should you have a machine in your office that is not being used or should you cease using the machine that is now in your office, report it immediately to the administrative officer. Do not request typewriters unless it is absolutely necessary.

#### B. Cutting Mimeograph Stencils

Much time and money can be saved by proper preparation of the stencil sheet. It will be remembered that it is as easy to prepare a good stencil as it is a poor one.

#### SUGGESTIONS

1. Clean the type on the typewriter with a bristle brush. Do not use the type cleaning fluid.
2. Plan your copy so that you will type it in exactly the right position of the stencil.
3. Type the stencil carefully to save stencils. Use a staccato smooth touch at all times.
4. Learn to make good corrections on the stencil. Do not use too much correction fluid since best results are obtained by using it sparingly.



5. Proofread stencils for possible errors since they will be expensive in time to correct after the stencils are put in the machine.
6. Save "cushion sheets" and use them over and over again.
7. Clean the type thoroughly after you are finished cutting stencils.

#### c. DITTO

Ditto inks, pencils, carbon paper, typewriter ribbons, printing ink etc., all contain ancilin which is the basis of the ditto process. These materials are chemically compounded. Ditto depends not only upon good craftsmanship in making the master, but also upon using paper, inks, and carbon paper that are in proper harmony chemically.

## Things to Watch in Typing the Master

In typing the ditto original, it is always best to back up the master sheet with a ditto backing sheet. It forms a cushion which prevents the typewriter keys from cutting through the original and embossing the sheet. The master that is embossed will not make a good contact when placed on the ditto roll. The same condition will also exist if the typewriter is adjusted to a very heavy stroke. It is easy to test whether a master sheet is embossed by rubbing the fingers over the reverse side of the sheet. If it is embossed, it has the feel of an engraved card.

The theory on which the noiseless typewriters work, of course, is the arrested stroke. This means that the ribbon, and therefore the sheet of paper on which you will type, does not receive the full impact of the typists touch. For regular typing, this does not matter, but for ditto work, where you must get the largest possible amount of ink from your touch, the resulting master does not give very many good copies. The most important point to remember in obtaining good ditto copies is to change the ribbon frequently. The maximum amount of ink consistent with good results is put on every ditto typewriter ribbon, but every stroke of the keys removes some of it. Sometimes you make a master from an old ribbon, that from a typists standpoint looks excellent, but for copying purposes is poor. The reason for this is quite obvious. The less ink on the ribbon, the more clean-cut your characters.

Ditto carbon looks and is usually exactly like any other sheet of carbon paper, the only difference lies in the fact that it is coated with ditto ink, so that it can be used to produce carbon copies. There are two principal ways in which ditto carbon is used:

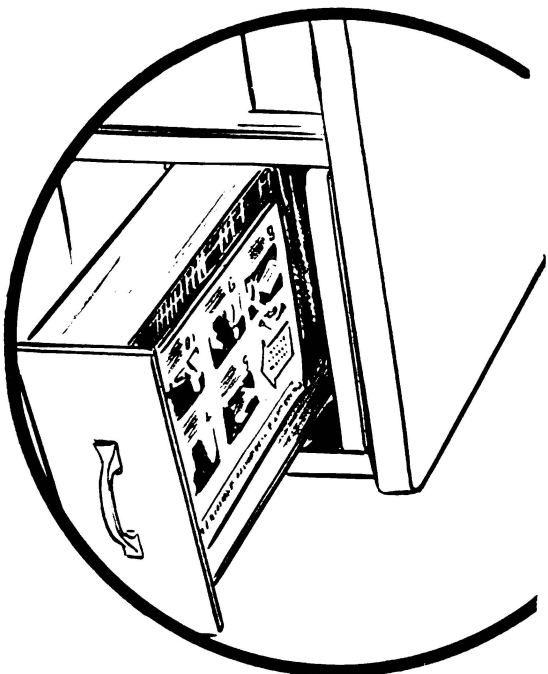
1. Where no ribbon master is needed - just one carbon master.
2. When you have to make both a ribbon and carbon master from your copy.

When using ditto carbon to make just one master, it is best to use as light a sheet as possible on top of the carbon paper, - a tissue sheet. The light tissue sheet is used so that you can see what you are writing, and still have as little as possible between the keys of the typewriter and the carbon tissues. Frequently it is necessary to make more than one master will make. In such cases, two or more masters can be made at one typing by using a ditto ribbon and one or more ditto carbon sheets.

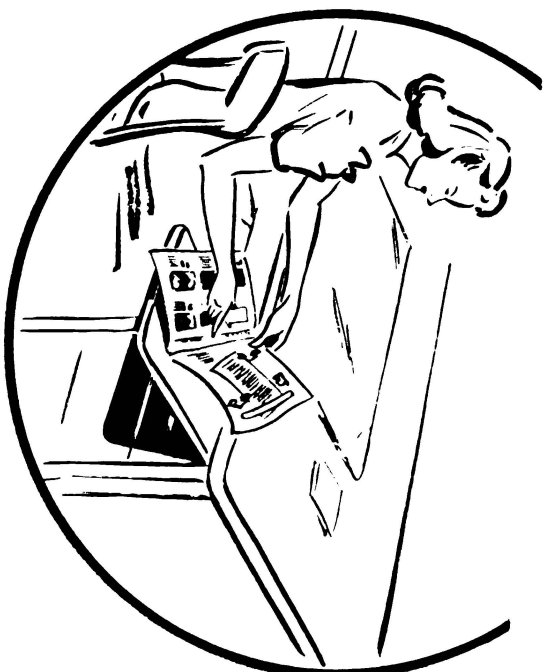
*For Quick, Easy Reference*

**WE SUGGEST THAT  
YOU KEEP THIS**

**... IN THE TOP RIGHT  
DRAWER OF YOUR DESK**



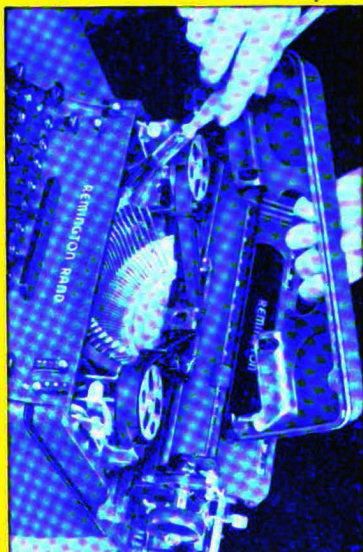
**OR ... ON YOUR  
CONSULTING SLIDE**





# TO HELP YOUR TYPEWRITER COOPERATE WITH YOU—

**DO THESE  
ONCE A  
WEEK!**



**6** **CLEAN TYPE** once a week at least — every day if volume typing is done—with clean, stiff brush. This will help production of clear-cut printwork.



**7** **CLEAN PLATEN** with alcohol, closely adhering to instructions given by an expert. Protection of the platen is vital now and assures firm "grip" of paper as it revolves around cylinder.



**8** **CLEAN TROUGH** when you clean platen. Use dry, clean cloth to dust it out. This prevents accumulation of dirt and grime in trough and results in finished typing that is always neat and cleaner.



**9** **LUBRICATE TYPEWRITER** in accordance with careful instructions from service expert. **NEVER OIL** type bars or segment. Remember that too much oil can prove harmful, so heed your service expert's advice.



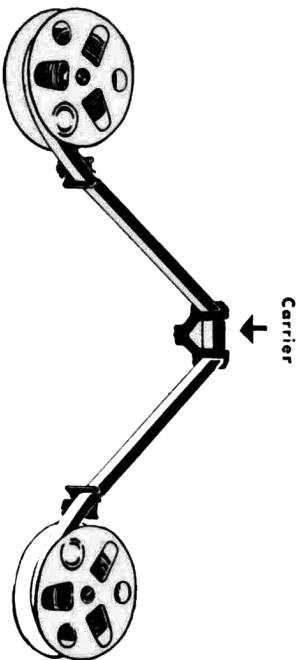
**10** **MECHANICAL COMPLICATIONS**, should be left entirely to service expert. Rely upon him for any adjustment or repairs other than those simple ones with which you are wholly familiar.



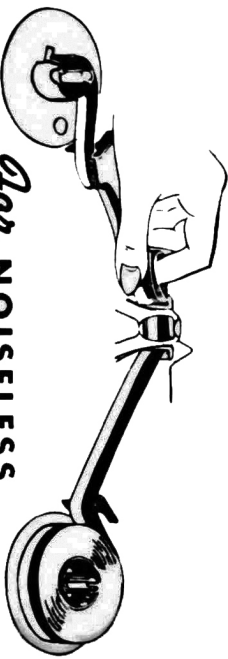
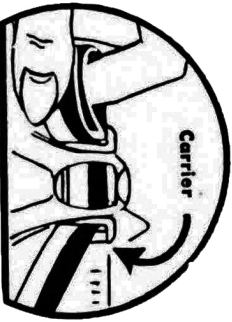
# HOW TO CHANGE YOUR TYPEWRITER RIBBON



1. Remove or lift Ribbon Covers.
2. Observe path of ribbon through carrier.
  - a. Note ribbon wind onto front or back of
  - b. Does ribbon wind onto front or back of right spool?
  - c. Does ribbon wind onto front or back of left spool?
3. Wind old ribbon on right-hand spool.
4. Disengage end of ribbon from left-hand ribbon.
5. Remove old spool.
  - a. Save old spool.
  - b. Place spool with new ribbon—black always on top.
  - c. If two color end of new ribbon on left-hand
7. Attach free end of new ribbon on left-hand spool in
  - a. If two color end of new ribbon on left-hand
  - b. core or spool.
  - c. Wind 6" of ribbon onto left-hand spool in direction observed in step 2c above.
8. Replace or close ribbon covers.
9. Place ribbon back of carrier.
10. Prepare for threading ribbon in carrier.
  - a. Lock the shift key.
  - b. Turn ribbon indicator on "red".
  - c. Hold down a key while threading or else collide two type bars simultaneously.
11. Thread ribbon into carrier when it was re-adjoining keys into carrier in accordance with your observation of its path when it was removed.
12. Prepare your typewriter to resume work.
  - a. Unlock shift key.
  - b. Turn ribbon indicator on "black".
  - c. Release two collided keys.



*For* STANDARD  
TYPEWRITERS



*For* NOISELESS  
TYPEWRITERS



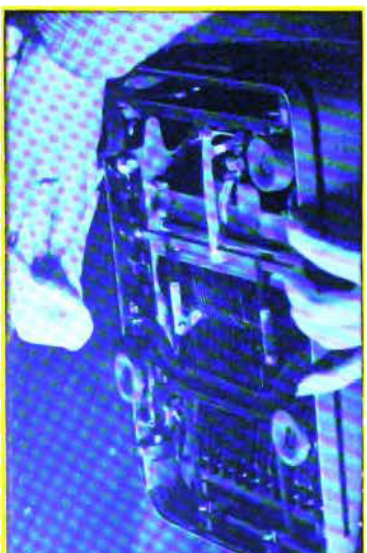
# MAKE YOUR TYPEWRITER LAST LONGER!

**DO THESE**

**EVERY  
DAY!**



**1** **DUST EXTERIOR** of your typewriter every morning when you come to work and at the end of the day. Dust is the greatest enemy of the typewriter.



**2** **DUST UNDERNEATH YOUR TYPEWRITER** every day so that air circulation will not carry dust particles that may lie on your desk into the inner workings of the machine.



**3** **DUST OUT ERASURE PARTICLES** from type segment every day. In erasing remember to move carriage to extreme right, or left, to prevent erasure dust from dropping into machine and clogging it. Always brush away from typewriter.



**4** **RELEASE PAPER FEED ROLLS** during the day when not in use and always at night. This prevents flat spots from developing on the feed rolls and platen. It is vital to protect them at this time.



**5** **KEEP TYPEWRITER COVERED** when not in use. If the typewriter is in a dusty spot, place cover over it during the day as well as at night. Air circulation is greatest during the day and can get into machine if it is not covered up when idle.

## Cautions.

Type with an even firm stroke.  
Proofread material before removing from typewriter.  
Handle carbon as little as possible.  
Handle at extreme edges only.  
Remove carbon from master copy as soon as completed.  
Never lay carbon or master copy active side down on desk or table  
Dispose of carbon sheet after each using  
Prepare a model on a typewriter using typewriting paper.  
When a satisfactory model has been set up use a sheet of special carbon paper (special type for use with this machine) and a sheet of special carbon paper.

In writing the master copy, the glossy (active) side of the carbon paper should face the master paper and a ditto backing sheet or a sheet of ordinary typewriting paper should be placed back of the carbon merely to act as a backing sheet.

Typewrite on the master copy sheet with a firm stroke, thus making a carbon copy, in mirror writing, on the back of this sheet.

Avoid errors. If you do make one, use a special white correction pencil and rub the white point over the error on the carbon reverse side of the sheet. Retype blacked out material.

## D. ADDING MACHINES, CALCULATORS, AND BOOKKEEPING MACHINES

The problem of adequate office machines for the duration promises to be very serious. At the present time it is impossible to buy new office machines and it is necessary to use our present machines not only more carefully than ever before but also to plan our work so that we can do it more efficiently. More emphasis must be given to conservation, maintenance, pooling, and substitutions.

### SUGGESTIONS

1. It is essential that you keep your machine clean at all times. to help in this, keep it covered when not in use. Dust it daily and do not let such foreign matter as eraser fallings, dirt, paper clips, rubber bands, pins, or bits of paper fall into the working parts.
2. Do not pound or punch your machine. Learn the normal operating rhythm of your machine and keep in step with it. Do not jam any of the mechanism or hurry the machine in any way. When your machine jams or breaks, do not manhandle it or try to adjust it, but call the repair man.

3. Do not tinker or play with the machine. The repair man should make all adjustments, repairs, and apply the necessary lubrication unless specific instructions are issued to the contrary.
4. Persons not familiar with the operation of the machine should not be permitted to operate it.

#### E. DICTATING AND TRANSCRIBING MACHINES

Dictating and transcribing machines are noted for time saving. This is true, however, only when they are used properly and the work is planned properly. When properly used, the dictator can save the time of his secretary by dictating at times when the secretary must necessarily be busy with callers, the morning mail, etc. Likewise, the secretary can transcribe the rolls that were dictated at a time when the dictator is busy with other matters.

#### SUGGESTIONS

1. Keep the machine free from dirt and dust and keep it covered when not in use.
2. The cylinders are made of wax and are very fragile. Handle carefully.
3. The cylinders should be handled by inserting the third and index finger rather than grasping them on the outside surface.
4. Do not manhandle the machines in any way. Their mechanism is carefully adjusted for perfect work and extreme care must be exercised at all times when handling them.
5. Check the stop and start mechanism each day to be sure that it works properly.

#### F. MISCELLANEOUS OFFICE MACHINES

There are many small office devices that are useful at certain times that will be increasingly difficult to obtain. Such items as stapling machines, hand punching machines, stenographer's notebook holders, pencil sharpeners, etc., need to be used carefully and be kept clean.

#### CONSERVATION OF TIME

Economy of time and labor is possible in almost every line of office activity. It is the responsibility of all to practice economy of time whenever possible. Labor is conserved and personal efficiency is improved by careful selection and training of the personnel by intelligent planning, and adequate supervision in the scheduling of work.

##### A. Improving machine utilization

Hundreds of typewriters and office machines are not being used to their fullest extent. Such failure to adequately use this equipment is nothing short of sabotage. Methods must be employed to use these machines and to meet the demand for them,

which include: (1) elimination or reduction of work performed on the typewriter or other office machines; (2) use of alternative methods of equipment; and (3) reduction of idel time of machines. Specific suggestions and practices under these heads are given below.

Elimination or reduction of work requiring a type-writer.

#### SUGGESTIONS

1. Discontinuance or simplification of all typed periodic and special reports found to be unnecessary or dispensable during the emergency period. This calls for a systematic review and appraisal of such reports.
2. Reduction in the frequency of typed reports, i.e., prepare daily reports weekly, weekly reports monthly or bimonthly, etc.
3. Elimination of unnecessary correspondence. A large per cent of business letters and memorandums need never be written. This is true particularly of so-called interoffice or intracompany correspondence. A telephone call will often suffice. Also, the length of many letters, memorandums, etc., can be reduced. Typing economies may be possible through the ommission of the salutation and the complimentary close. The review and analysis of carbon copies of correspondence from time to time will reveal unnecessary material.
4. Reduce the need for retyping through more careiin original dictation or composition and manual corrections. Strict adherence to the instructions contained in the Stenographers Guide will eliminate the necessity of retyping many letters.
5. Use of form or processed letters, post cards, and memorandums or form paragraphs, and fill-in letters.
6. Redesigning forms or records to permit simultaneous rather than individual typing.

B. Tips that every smart typist should know.

1. Feeding the paper, When inserting a number of pages into the machines, place them back of the platen between the feed rolls. Use the left hand merely as a guide. If the pages are gripped they will crease, get out of line, and become carbon smeared. Avoid gripping the paper tightly.

When difficulty is experienced in feeding paper as a result of worn feed rolls or platen, the paper release lever may be pressed to open the feed-roll mechanism, permitting the operator to feed paper into the machine. The typewriter should be operated

in this manner only until proper repairs can be made.

2. Making erasures. It is often desirable and necessary to make an erasure near the bottom of the page. This is especially true when a number of carbon copies are made. When rolling the paper up for an erasure, great care must be used to prevent rolling the sheets off the feed rolls. This difficulty can be avoided in the following manner: (a) Roll the paper back so that it is about 1 inch above the back feed rolls; (b) insert a sheet of bond paper between the rear feed rolls and the last sheet of paper. This additional sheet serves the same purpose as one continuous piece of paper; (c) feed through from the back, roll the pages up and make the necessary correction on each of the sheets.

The operator must not pull the paper in making this correction, for by so doing the paper will be moved out of line. In making erasures at the bottom of the page, erase across--not up and down. Do not move the carriage to the right nor to the left as you have been taught to do in making ordinary erasures. After the corrections have been made, turn the platen back to the line of writing and remove the sheet of paper.

3. Typing on stapled forms. Typing on stapled forms may easily be done in the following manner: (a) Insert a sheet of bond paper into the machine so that about 1 inch remains above the front scale (be sure card attachments are disengaged); (b) hold the stapled form in the left hand, separate and place the individual sheets for correction or notation between the platen and the extra sheet of heavy paper; (c) turn the platen forward and roll the sheet to the desired position; and (d) after such change has been made, turn the platen backward, remove the page and repeat the process until all corrections and notations have been made.
4. Paper channel. When inserting a number of sheets of paper in the machine, the use of a paper channel will keep the papers in line and even at the top. A paper channel is made by folding a full-width strip of paper about  $1\frac{1}{2}$  inches wide. Place the piece of folded paper between the back feed roller and the platen. Insert the sheets of paper into this channel and turn the platen until the paper is at the desired position. In this way the sheets are fed evenly. The paper channel should always be the same width or wider than the material to be inserted into the machine.
5. Typing on labels and small cards. There is no special attachment on any standard typewriter to hold labels and small cards in place. However, this can be accomplished by the following device: (a) Fold a sheet of standard-size paper in the middle; (b) place a ruler about  $\frac{1}{4}$  inch from the crease; (c) fold the top end back over the



- ruler. In this manner, a pleat about  $\frac{1}{4}$  inch deep is formed in the middle of the paper. This pleat may be fastened at either end by tape or gummed paper (distance from each other depending on the width of the label) so that a pocket is formed; (d) insert the sheet of paper into the machine and roll it forward so that the top of the crease which has been made is about  $1\frac{1}{2}$  inch above the front scale; and (e) insert the small label into this pocket, position the platen for writing and type the desired data on the label. The pocket that has been formed holds the label in place.
6. Variable line spacer. When typing on ruled lines, the spacing may be adjusted to the width of the lines on the paper by using the variable line spacer. To operate this device: (a) Insert the ruled paper or card into the machine (b) push in or pull out the knob (depending upon the make of the machine used) on the variable line spacer; (c) turn the platen to the proper position so that the line of writing will coincide with the first line on the paper; (d) lock the variable line spacer and continue with the typing; and (e) for the next line, release the variable line spacer, turn the platen to the proper position, lock the spacer, and continue writing. Follow this procedure until the work on the ruled material is complete. The variable line spacer is used only in writing on ruled paper forms.
  7. Platen roller releases. The platen roller release, like the variable line spacer, permits a change in the line of writing for the purpose of writing raised figures such as numbers referring to footnotes. In addition, it enables the operator to return without difficulty to the original line of writing. When such is needed, release the platen roller release lever, turn the platen to the desired position, write the footnote or other data, return the lever to its normal operating position, turn the platen back to its original line of writing and continue the work.
  8. Touch regulator. All the new machines, except the Remington Noiseless, have built into the machine a device for regulating the touch. Each typewriter company has its own trade name for this mechanical device: On the Underwood, "Dual Touch Tuning", L. C. Smith, "Touch Selector"; Royal, "Touch Control"; Woodstock, "Speed Control"; and Remington-Rand, "Touch Regulator". The purpose of the touch regulator is to increase or decrease the tension of the keys to suit the needs of the individual operator. It should be emphasized that the touch regulator does not effect the speed with which the machine operates but only serves to control the tension of the keys. The touch regulator on all machines, except the Woodstock and Remington-Rand, is graduated from 0 to 6.1/ The Woodstock does not have a graduated scale for setting the touch regulator but with each machine there is furnished a small key to be used in

setting the touch device. It is necessary for the operator to experiment in setting the regulator for the best results.

If the operator has found that the touch regulator is properly set in a given position, she should make note of that position so that after any change is made, she can always return the touch regulator lever to the proper position for her regular work.

9. The platen. When the majority of the work required a great number of carbon copies, a hard platen should be installed in the typewriter. The L. C. Smith and Remington-Rand have a removable platen feature, and a medium and hard platen can be furnished with these machines. The Remington-Noiseless also has a removable platen feature for cleaning the machine and also a card platen can be installed. On the right end of the rubber on the L. C. Smith platen, there is a notch cut out which designates a hard platen. On the Royal there is an "M" stamped on the right end of the platen, which means medium, or an "XM" which means a hard platen. On all other typewriters there are no marks of identification as to hardness of the rubber, but an operator must know her machine for best results in making carbon copies.
10. Margin stops. Two of the standard machines, the L. C. Smith and Royal, have automatic margin stops which eliminate the necessity of setting the stops by hand. The automatic margin lever on the L. C. Smith is located on the upper right carriage on this paper table. It is marked "Margin, Left Set, Lock and Right Set." To set the automatic margin on the L. C. Smith for the left margin position the carriage, move the lever up and release it. It locks automatically. For the right side, position the carriage, move the automatic margin lever down and release it. It locks automatically. For the right side, position the carriage, move the automatic margin lever down release it. Both margins are then set. On the Royal, there are 2 levers, one on the left and one on the right, back of the paper table, marked "Magic Margin." To position the left margin, follow the procedure as in the case of the L. C. Smith, but pull the lever forward. This sets the stops. Press the lever back to its original position. Do not fail to move the lever back, as the Royal does not lock automatically.
11. Margin release. On the right margin of the Underwood typewriter, 7 additional spaces may be obtained before the keys lock after the bell rings. Pressing the margin release key will permit four more spaces before the keys lock again. One extra letter may be placed in the word by pressing the margin release key a second time. Additional space can be obtained only by changing the margin stops.

For notations outside the left margin on the Underwood, merely press the release lever located on the front of the carriage at

the right which will permit writing in the margin on the left without changing the margin stop. On all other typewriters, pressing the margin release lever permits the travel of the carriage the full distance both left and right. On the new Royal the margin may be changed by holding the "Magic Margin" lever forward and by moving the carriage to the desired position before pressing the lever back for normal operation. Follow the same procedure on the L. C. Smith except that the lever returns to its original position automatically when released.

12. Card attachments (1). On all machines, except the Noiseless and the Woodstock, the card attachment should be in the upright position for all normal typing, including writing on cards, envelopes, and folders. If the card attachments are disengaged to make corrections, front feeding, or changing of the ribbon, care must be taken to return them to the normal position before continuing the typing.
13. Card attachments (2). On the Noiseless and Woodstock typewriters the card attachments must be disengaged for normal work. On either side of the type guides of these two machines are two nickel-plated levers which must be pushed in toward the type guide for card work and to the extreme right or left for normal work. This is very important on these two machines. Failure to follow this suggestion will result in black lines showing on the original and carbon copies due to the pressure of the line scale.
14. Card attachments (3). A card platen is available for use on the L. C. Smith and the Remington-Rand. Such a platen is strongly recommended if the volume of work justifies it.
15. Overhead paper bail. The overhead paper bail, which replaces paper fingers, is used to hold the paper firmly against the platen. To insure even distribution of pressure and avoid creasing of the paper, the bail rolls would be placed about one-third of the distance in from the edges of the paper. Improper placement of the bail rolls at the edge of the paper frequently causes the carbon copies and original to crease.

The bail rolls gradually absorb ink from the typed copy and may eventually smear the paper and leave black marks. When this occurs, clean the rolls with alcohol. note with liquid type cleaner.

16. Tabulator (1). On all late model typewriters, except the L. C. Smith and Woodstock, the tabulator stops are set and cleared from the keyboard. On the Remington Noiseless, Remington-Rand, Royal, and Underwood, the stops are set and cleared individually or total clear by buttons marked "Tab Set" and "Tab Stop Clear." To clear all the stops on the above machines, push the Tab Clear Lever," hold



this lever down and move the carriage to extreme right. On the L. C. Smith, the stops are set and cleared at once by a lever located on the right side of the carriage. This lever is marked "Total Tab-Clear" on the L. C. Smith but is not marked on the Woodstock, although the Woodstock has such a lever.

17. Tabulator (2). The Woodstock does not have a "Single Tab Clear." On the Royal, the "Tab Stop Clear" is found on the left side of the machine directly above the back space key, and the tab set is in a corresponding position on the right side. On the Remington Noiseless, Remington-Rand, L. C. Smith, and Underwood, they are located above the top row of keys.

In setting the individual tab stops on the Remington Noiseless, Woodstock, and L. C. Smith, always release the tab set lever before striking the space bar for the next setting. This precaution will prevent locking of the carriage. In the event that the carriage does lock, release it by pressing the back space key.

18. Ribbon indicator. Never operate the typewriter with ribbon on the red indicator unless there is a two-color ribbon on the machine. Operating the machine with the ribbon indicator on the red raises the ribbon carrier twice its normal height, making the action heavy and causing the ribbon carrier to stick. Therefore, use the red indicator only when some figures or notations are actually to be shown in red.

For cutting stencils, always keep the ribbon switch on the white indicator.

19. Changing the ribbon. On the Underwood and Woodstock typewriters, the ribbon spools can and should be reversed if a new ribbon is not available. On other machines a new ribbon should replace the old one.

The ribbon is changed on all standard typewriters by locking the carriage in upper case and moving the ribbon switch to the red indicator. On the L. C. Smith and Underwood, hold the space bar down to make the ribbon carrier accessible for changing. On the Remington-Rand, Royal, and Woodstock, the ribbon carrier is made accessible by locking the two center type bars, "H" and "Y", that is, by bringing these two keys toward the writing point. Always place the ribbon on the right spool first. Secure the loose end of the ribbon on the left spool before attempting to thread the ribbon through the carrier. When the ribbon has been changed, move the ribbon switch back to the black or blue indicator.

20. Noiseless typewriters. Best results are obtained from a noiseless typewriter by using a staccato touch: that is, the keys should be released just as rapidly as they are struck. A follow-through on the key of the noiseless typewriter results in double impressions or skipping.

21. The pressure regulator. In making a number of carbon copies, there is a tendency for the ribbon carrier to stick and obscure the writing. This difficulty may be eliminated by use of the pressure regulator, a lever located in the center of the machine directly under the top plate. When the carrier sticks, move the pressure regulator to the right until the carrier drops back to its correct position. Leave the pressure regulator in this position for this particular job, but move it back to the extreme left when the number of carbons required has been decreased.

For card work and heavy folders, move the card attachment toward the center of the machines. For normal work, release the card attachments. Remember when using the card attachment, in for work and out for normal work.

22. The paper feed tension lever. This is a nickel-plated knob on the right side of the machine directly back of the platen knob. When inserting heavy folders or cards in the machine, move this lever back. This will increase the tension of the feed rolls. An increased pressure on the feed roll release lever will be noticed. The paper-feed tension lever should be returned to its original position when normal work is resumed.
23. Ribbon change on noiseless typewriter (1). On the noiseless typewriter the ribbon is changed in the following manner: (a) leave the ribbon spool covers on the ribbon until it is wound; and (b) place the new ribbon on the right side. Do not use two ribbon spools.
24. Ribbon change on noiseless typewriter (2). The eyelet on the loose end of the ribbon should be placed in slot on the left ribbon spool hub; (a) both ends of the ribbon should be secure before the ribbon is threaded through the ribbon carrier; and (b) lock the machine in upper case and move the ribbon switch to the red indicator.
25. Ribbon change on noiseless typewriter (3). (a) Push in the ribbon vibrator arm with the second finger of the right hand, and hold it in this position while threading the ribbon through the ribbon carrier; (b) remove the hand, move ribbon switch back to black indicator; and (c) release shift lock and continue work.
26. Centering headings (1). On all machines except the Underwood, use the following method center headings. Place the paper so that the left edge is at zero on the cylinder scale.
27. Centering headings (2). For standard Government-size typing paper (8" x 10 $\frac{1}{2}$ " ), the scale reading at the right edge

of the paper will be 96. One half of 96 is 48, which point on the scale indicates the center of the page.

28. Centering headings (3). (a) Set the carriage at 48; and (b) spell the heading with the back space key in the following manner:
1. The down stroke is the first letter, up stroke the second, down stroke the third, etc.
  2. One complete back space will account for two letters of the heading, or a letter and a space or symbol.
  3. Where this counting ends, begin typing the heading.
29. Centering headings (4). The Underwood differs from other machines with regard to centering headings. On the paper table there are graduation marks reading from 0 at either side to 4 at the center.
30. Centering headings (5). The margin scale is a two-color scale, the lower green scale reading from left to right, and the upper white scale from right to left. Position the paper so that it is at an equal distance from both ends of the platen, as indicated by the paper table scale. Move the carriage as far to the right as it will go, i. e., to 0. Spell the heading with the space bar, using a complete down and up stroke for each letter, symbol, and space. Using the heading, "U. S. Office of Education," the carriage pointer indicates 42 on the white scale. Type the heading. This method applies to any size of heading that is used.
31. That extra letter. It is sometimes necessary to insert four letters in place of three, or vice versa. For example, you have written "had" and it should have been "have". The procedure outlined below applies to all machines except the Underwood.

On the Remington-Rand, L. C. Smith, and Woodstock, the method is as follows:

- (a) Erase the word "had."
- (b) Position the carriage one space before the first letter of the incorrect word.
- (c) Press down the space bar.
- (d) Holding it down, strike the letter "h"; release the space bar.

(e) Press the space bar again; holding it down, strike the letter "a"; release the space bar.

(f) Repeat this until the word "have" is completed

Example: Incorrect: I had it  
Corrected: I have it

To reverse the process:

(a) Position the carriage one space before the first letter of the incorrect word.

(b) Press down the space bar and release it.

(c) Press down again; holding it down, strike the letter "h"; release the space bar.

(d) Press the space bar again; holding it down, strike the second letter; etc.

Example: Incorrect: I have it  
Corrected: I had it

Example: Incorrect: The quick brown fox jump over  
the lazy dog.

Corrected: The quick brown fox jumps over  
the lazy dog.

On the noiseless, to insert an extra letter, the procedure is: Position the carriage at the first letter of the word that has been erased: strike the space bar once, hold the back space key down, strike the letter "j", strike the space bar twice, hold the back space key down once, and follow this process until the word "jumps" has been inserted in the place of the word "jump." To reverse this process, position the carriage as previously, strike the space bar twice, hold the back space key down once; space bar twice, hold the back space once, Remember in each case not to release the back space key until you are ready to go forward with the space bar.

32. Improvisation of punctuation marks. Certain characters which may not appear on the typewriter keyboard can be made by overprinting two standard characters as follows:

★ Star	Strike capital "A"; backspace and strike small "v".
--------	--

+ Division mark	Strike colon; backspace, strike hyphen.
§ Dollar Sign	Strike capital "S"; backspace, strike capital "I".
£ Pound Sterling	Strike capital "L"; backspace, strike small "f".
! Exclamation	Strike apostrophe; backspace, strike period.
= Equal sign	Strike hyphen; backspace, release the platen lock and move slightly; strike second hyphen.
ç Cedilla	Strike small "c"; backspace, strike comma.
ae A diphthong	Hold the space bar down; strike first letter; release the space bar; strike second letter. This can be done on the Remington-Rand, L. C. Smith, and Woodstock, and Royal.

When a great deal of underscoring is done on either the Underwood or noiseless typewriter, turn the ribbon-winding handle as you type. This will make an absolutely straight line. To draw lines for making tables, release platen-lock lever, hold a pencil securely against the card attachment, and turn the platen for vertical lines and move the carriage to right or left for horizontal lines.

### Suggestions to the Typist to Obtain Greater Efficiency from her Machine

#### SUGGESTIONS

1. Height of chair and desk. The equipment used should be adjusted so that when the typist's hands are in position on the keyboard to the forearm, wrist, and back of the hand slant upward in a straight line parallel to the keyboard slant (30 degrees). This means that the desk is approximately 30 inches from the floor, and the difference between the seat of the chair and top of the desk is 12 inches. These heights and measurements apply to most average individuals with only minor adjustments necessary in certain instances.
2. Correct keyboard technique. It is essential that the typist keep the fingers close to the keyboard, using what is known as the stroking motion rather than pounding on the keys with much motion of the arms. The action should be in the fingers with motion in the arms and hands eliminated as completely as possible.
3. Carriage return. The machine should be adjusted so that the

carriage can be thrown in order to complete the return. The tension on some machines is so tight that the carriage must be pushed across, which is wasteful of both time and effort. It is emphasized that the eyes should be kept on the copy material when the carriage is returned.

D. Transcription Work Habits to Save Time.

SUGGESTIONS

1. Place notebook in an upright position.
2. Cross notes off as soon as they are transcribed.
3. Space the typed copy correctly on the letterhead through accurate estimate of the shorthand notes.
4. Dating of the notebook each day.
5. Transcribing without the need for a review reading of the shorthand notes.
6. Reading ahead when transcribing so that there will be a continuity to the work on the typewriter and for greater accuracy of the transcript.
7. Keeping the eyes on the shorthand notebook and reading the notes ahead in such a scope as not to require the constant looking up at the finished typewritten work.
8. Filing completed shorthand notebooks for reference.
9. Looking up words in the dictionary when necessary.
10. Timing the transcription production work. NOTE: Twenty words a minute should be the minimum transcription speed.

E. Placement of Work Materials.

Much time and effort can be saved through proper placement of work materials on the desk. Paper and envelopes should be placed in a drawer that is convenient to the operator. The same should be true for all forms and other papers that are used daily. Through a careful analysis of the placement of office desks, typewriters, and office machines greater efficiency can be obtained. Study your working conditions and readjust your work habits to conform with practice that will save time and effort.

Miscellaneous

A. Lights



The same electrical energy that illuminates the lights in your office and on your desk turns the wheels of industry. Although

light is an essential factor in producing good work under proper conditions, it is important that lights be turned off when they are not needed. While you are out of your office on rest periods or at noon, be sure to turn off the lights.

During daylight hours, raise the shades or blinds in your office and do not turn on your lights unless there is inadequate light.

B. Telephone



The telephone is not only a useful office tool but it is also a device through which you represent yourself and your office to other persons. Such representation may be good or it may be bad. Through proper use of the telephone and through practicing good telephone courtesy, you will represent yourself as a cheerful, courteous, intelligent, and efficient person.

SUGGESTIONS

1. Answer your telephone promptly.
2. Identify yourself when answering.
3. Keep telephone attended properly.
4. Make calls correctly.
5. Ask questions tactfully.
6. Be careful when leaving the line.
7. Handle calls to completion.
8. Leave effective message.
9. End calls courteously.
10. Develop a pleasing telephone manner.
11. Make all telephone calls brief.