

DEPARTMENT OF THE ARMY PAMPHLET NO. 18-510-19

OPERATOR TRAINING
FLEXOWRITER WRITING MACHINE
MODEL SFD, SPD, SPS

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NG: None.

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For explanation of abbreviations used see AR 320-50.

Manual for

FLEXOWRITER* writing machine
Operator Training

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INTRODUCTION

This training guide provides detailed instructions for a step-by-step study of the operating principles of the FLEXOWRITER writing machine. It is based on a Model SFD, with a standard double-case keyboard and an edge card punch and reader.

Instructions are included to cover a writing machine with proportional spacing type or a tape punch and reader. Special reference is made to variations of operation encountered with Model SPS or Model SPD.

COVERAGE

The phases of machine operation covered in this training guide include:

Phase I - Writing Machine

Introduction to the writing machine and details of it. Machine assignments on setting of margin and tab stops and operation of a double case keyboard. Special notations on Model SPS and Model SPD, and on Model SFD-President.

Phase II - Punched Paper Tape

Complete coverage of punched paper tape as used in a writing machine. Machine assignments on all aspects of tape operation including tape preparation, correction and revision.

Phase III - Punch Control

Basic introduction to manual and automatic punch control for the writing machine's punch. Special notations on punch control for the Model SPS and Model SPD. Sample programming exercise for machine practice.

Phase IV - Automatic Letterwriting

Complete discussion and machine practice on an automatic letterwriting application. This phase may be used when letterwriting is involved in an application, or as an additional study of punch control.

Phase V - Edge-Punched Cards

Explanation and machine practice on the use of edge cards, both continuous and pre-cut unit record cards. This phase may be omitted if edge cards are not used in the application.

Phase VI - Supplement For Use With Model SPS, SPD

Explanation and practice on manual Non-Print and Tape Skip, for use with Model SPS or Model SPD.

INSTRUCTIONS FOR USE

It is assumed that you, the trainee, are familiar with a manually operated or an electric typewriter, and that you have already been given some basic instruction on the FRIDEN* writing machine.

This training guide consists of reading assignments, special notes on recommended operating procedures, and assignments for machine practice. Read the text of the training guide carefully. Pay special attention to the NOTES.

When three asterisks (***) are shown in the text you are to:

- (1) Complete a reading assignment in the manual indicated, or
- (2) Complete a machine assignment on your writing machine.

After completing the required reading or machine assignment, return to the training guide for further instruction.

Start with page one and continue until all phases of the outline have been completed. Your FRIDEN Representative may tell you to omit a certain phase of the training guide that does not pertain to your writing machine application.

MATERIALS REQUIRED

Make certain that you have the necessary materials for each phase of study to be covered.

General Materials

Recorder-Reproducer
(equipped with paper tape)

“FLEXOWRITER Writing Machine” - Technical Manual
(Form SP 8672R2)

“FLEXOWRITER Writing Machine (Model SFD)” - Operator
Instruction Manual
(Form SP 8828)

Practice Paper

Material for use with Model SPS, SPD

“FLEXOWRITER Writing Machine Models SPS, SPD” - Technical Manual
(Form SP 8673)

Materials for use in Phase IV - Automatic Letterwriting

Letterhead
FRIDEN Tape Cement
Envelopes

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Materials for use in Phase V - Edge-Punched Cards

Sample edge cards (continuous or pre-cut unit record cards)

If continuous cards are used:

Continuous labels

Card cutter

PHASE I - WRITING MACHINE

You are about to begin a detailed study of the FRIDEN writing machine. It contains the power supply, the keylevers, and all necessary equipment to write a document. This phase of study contains reading assignments and machine practices that will acquaint you with the writing machine.

GENERAL DESCRIPTION

The writing machine you are using will probably be one of 3 basic models: Model SFD (Double Case), Model SPS (Single Case) or Model SPD (Double Case). Follow the reading assignments given below under the model designation of your machine.

Model SFD

A general description of the writing machine, Model SFD, is found in the "FLEXOWRITER Writing Machine" -Technical Manual. Read the information covered on pages 3-4, under GENERAL, OPERATING SPEEDS, KEYBOARD and CARRIAGE.***

Model SPS

A general description of the Model SPS is found in the "FLEXOWRITER Writing Machine, Models SPS, SPD" -Technical Manual. Read the information covered on pages 3-4, under GENERAL, KEYBOARD and CARRIAGE.***

Model SPD

The writing machine, Model SPD, is a variation of the Model SPS. Read the general description of the Model SPS, found in the "FLEXOWRITER writing machine, Models SPS, SPD", -Technical Manual on pages 3-4, under GENERAL KEYBOARD and CARRIAGE. Also read page 15 of referenced manual and note the ways in which the Model SPD differs from the Model SPS. ***

CARRIAGE CONTROLS

The writing machine is similar in many respects to a standard electric typewriter. Review the parts of the machine that you will use to position and align your documents correctly by reading the page on Carriage Controls in the "FLEXOWRITER writing machine Model SFD" -Operator Instruction Manual. Be able to recognize and use correctly each of the machine features discussed.

NOTE: You will not be able to move the writing machine's carriage unless the power switch (located on the right-hand side of the keyboard) is turned ON. ***

Additional information on basic machine set-up and care is given in the Operator Instruction Manual. Read carefully the pages on Insertion of Fabric Ribbon and Care of the writing machine. Use these pages as a guide when necessary. ***

MARGIN AND TAB SETTINGS

Because of the heavy duty structure of the writing machine, the margin and tab stop positions are set differently than those on a typewriter. Read the page titled Margin - Tabs in the "FLEXOWRITER writing machine Model SFD" -Operator Instruction Manual. Follow the instructions and set the margin and tabs on your own machine as shown in the picture. ***

You will note that there is no provision for setting a right-hand margin on the writing machine. This is not required because you will be preparing documents automatically, and the length of the lines will be controlled by Carriage Return codes in the tapes or cards that you are using.

KEYBOARD (Double-Case)

NOTE: Omit this section if you are using a writing machine with a single-case keyboard.

If you are using a Model SFD-President, read pages 15-18 of the "FLEXOWRITER Writing Machine" -Technical Manual for a discussion of proportional spacing type. ***

The writing machine's keyboard has two special features which assure accurate typing: The keylever interlock which prevents you from depressing two keys at the same time, and the positive shift feature which locks the type basket in either upper or lower case until the opposite case shift is touched.

Upper case and lower case keys are located at either side of the writing machine keyboard. When you touch UPPER CASE, the type basket shifts into upper case. All further typing will be in upper case until you touch LOWER CASE, returning the basket to lower case position.

For example, in order to type the word Florida, you must first touch UPPER CASE, and then type F. You must then touch LOWER CASE before typing lorida. Do not attempt to hold the the upper case key down as you type the F, as they keyboard interlock will prevent you from depressing the F keylever. After a little practice you will become completely familiar with the shifting operation.

NOTE: Each time you begin a new document make certain that your writing machine is conditioned in the proper shift by touching the respective shift key.

ASSIGNMENT (Writing Machine)

This assignment is designed to acquaint you with the operation of the writing machine's keyboard. Although the practice copy shown is in double-case type, you can also complete the assignment on a single-case unit. Simply follow the margin and tab settings for a Pica machine, and type the copy ignoring the upper and lower case designations.

Machine Set-up

Set the following margin and tab stops on your writing machine, according to the type style of your machine:

ELITE TYPE --- Set margin at 10
Set tabs at 15, 19, 36, 41, 46
PICA TYPE ---- Set margin at 10
Set tabs at 20, 28, 64, 72, 80

Set paper guide so that first typing position is 1/2 inch from left edge of paper. Make sure punch switch, located on the right-hand side of the machine, above the power switch, is in OFF position.

Turn power switch ON. Type the material shown below under Practice Copy #1, using the writing machine as you would an electric typewriter. ***

Practice Copy #1

The Office-Rite Manufacturing Company announces a price and/or product change effective July 5, 1962. This is in keeping with our policy of providing our salesmen with complete and up-to-date information regarding our line of products. Changes cover the following equipment. Please adjust your catalogs accordingly.

4942L	F-632	Style-Master Executive File	43.00	50.95	32.75
4986-1	D-21	Style-Master Ambassador Desk	99.50	125.00	135.00
49642PT	T-109	Stowaway Secretarial Desk - DP	100.00	105.00	112.00
7450-00	D-59	Calculating Machine Desk	79.00	84.00	89.00

PHASE II - PUNCHED PAPER TAPE

As you have just learned, touching a keylever on the writing machine's keyboard will cause the unit to type the character or perform the function indicated on that keylever. In addition, the machine is equipped with a punching unit which is capable of punching a code equivalent of the keylever operation in a paper tape. There is a code for every keylever and function on the writing machine. Once this tape is punched, it can be read in the reading unit of the machine to automatically produce a typewritten document.

TAPE INSERTION

In order to assure proper punching of the tape, it must first be inserted correctly on the writing machine's punch. The punch is constructed with guides and checks that assure accurate positioning of the tape.

Following the illustration below (Figure A), insert the tape in the punch as follows:

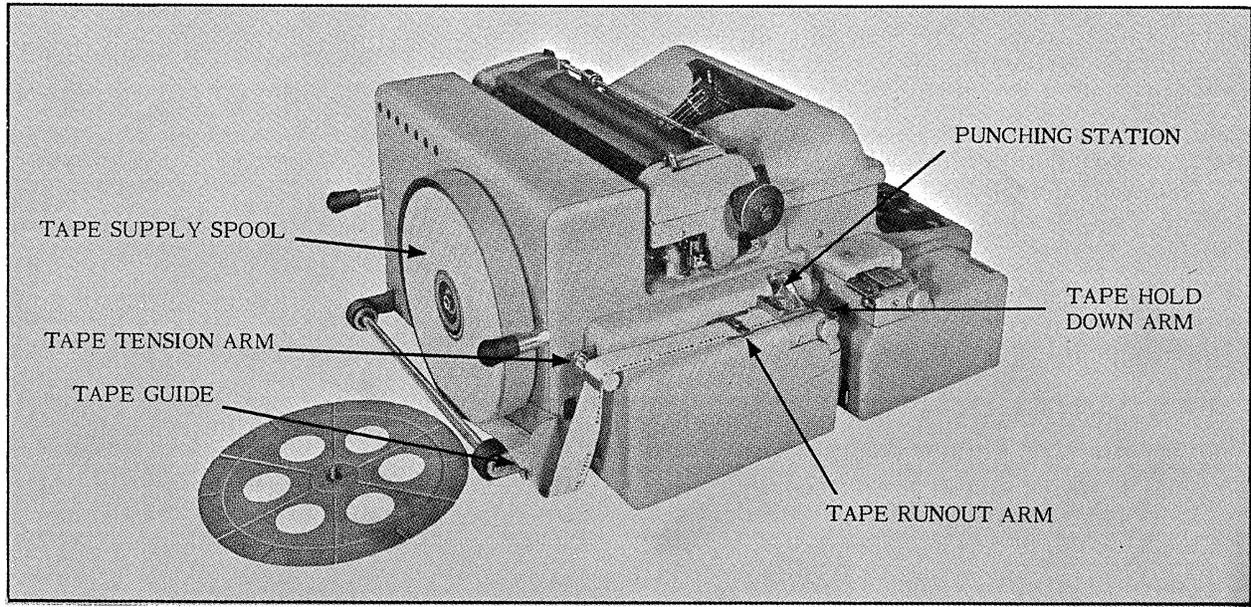


Figure A

1. Unscrew the tape supply spool cover. Remove the roll of tape.
2. Place a new roll of tape in the tape supply spool. Make sure the tape feeds from the bottom of the roll, as shown in the illustration.
3. Feed the tape under the tape guide, up through the tape tension arm and along the top of the punch.

The printing on the edge of the tape must be visible to you, and at your left as you sit in front of the machine.

4. Move the tape hold down arm forward. Thread the tape as illustrated, under the tape runout arm, under the punching station and the tape hold down arm.

NOTE: In an edge card punch, the tape threads through a small guide in the absence of a tape runout arm. See figure 22 on page 20 of the "FLEXOWRITER Writing Machine" - Technical Manual.

5. Close the tape hold down arm and replace the cover of the tape supply spool.
6. Turn the punch switch to ALL position and touch the panel switch labeled TAPE FEED. This will advance the tape through the punch and perforate a leader strip of feed holes in the tape.

During this operation it may be necessary to apply a gentle pulling motion to the lead end of the tape to start it feeding properly through the punch.

NOTE: You will know when a new roll of tape is needed, as the color of the tape changes at the end of the roll.

ASSIGNMENT (Tape Insertion)

Follow carefully steps 1 - 6 as listed under TAPE INSERTION, and insert a roll of tape in the punch of your writing machine. ***

TAPE PREPARATION

Preparation of tape is no more difficult than the typing of a document. As you touch each key on the keyboard, the machine's punch will simultaneously punch a code in the tape. The sheet of paper on which you are typing will provide proof of what has been punched in the tape.

A few simple rules should be followed when preparing a tape:

1. Turn on the writing machine's power switch.
2. Put the punch switch in ALL position (everything that you type will be recorded in tape).
3. Hold down the TAPE FEED panel switch until about 3 inches of tape feed out of the punch. Let the tape feed down between the punch and the reader.
4. Touch the Carriage Return key (CAR RET) to insure correct positioning of the carriage.
5. If you are using a double case writing machine, touch the UPPER CASE keylever to assure correct case shift.

Proceed to type, as you would on a standard typewriter. When you have finished typing the information that you want recorded in tape, end the tape as follows:

1. Touch the STOP CODE panel switch. (This will not cause typing on the document, but will punch a code in the tape.)
2. Using the TAPE FEED panel switch, feed out about 3 inches of tape to advance the last code punched beyond the tear-off point.
3. Remove the tape from the punch by grasping it just below the tape hold down arm, pulling it up and to the left, and tearing it against the arm.

ASSIGNMENT (Tape Preparation)

Follow these rules carefully and prepare a tape of a few lines of copy. Save the tape for use in the next section.

NOTE: If you make an error, ignore it. Error correction will be covered in detail later on. ***

TAPE READING

Once a tape is prepared, it will automatically type its message as many times as required by means of the writing machine's reader. Again, certain steps must be followed in order to insert a tape in the reader correctly. Note the instructions listed under Tape Reader or Edge Card Reader, according to the type of reader on the FLEXOWRITER writing machine you are using.

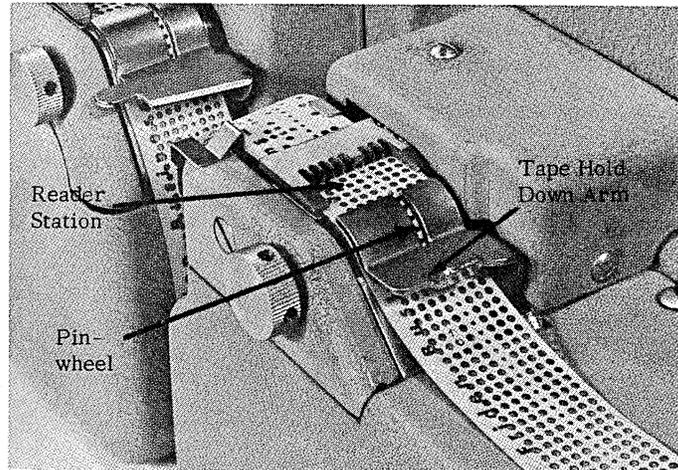


Figure B

Tape Reader

Tape is inserted in the tape reader as shown in Figure B. To read a writing machine's tape, follow these steps:

1. Open the tape hold down arm on the reader by depressing the front part of the arm.
2. Feed the trailing end of the tape down between the tape punch and the tape reader. Be sure that the tape passes through the guide on the back of the reader.
3. Slide the leading end of the tape into the tape reader from the left side. The printing on the edge of the tape must be visible to you, and at your left as you sit at the front of the machine.

Make certain that the feed holes have engaged the pins of the pinwheel, and that the first code in the tape (with the exception of the Tape Feed codes) is behind the reader station.

4. Close the tape hold down arm.
5. When the tape is correctly inserted in the machine's reader, touch the START READ panel switch. The unit will type the encoded information at approximately 100 words per minute.
6. When the reader stops, remove the tape by opening the tape hold down arm and sliding the tape out to the side.

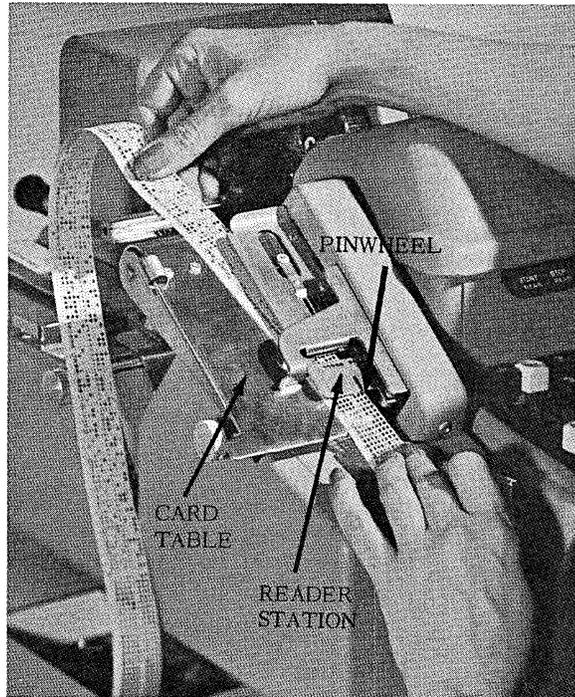


Figure C

Edge Card Reader

Tape is inserted in the edge card reader as shown in Figure C. To read a writing machine's tape, follow these steps:

1. Raise the reader card table by pulling up on the lower left-hand corner of the table.
2. Feed the trailing end of the tape down between the punch and the edge card reader.
3. Slide the leading end of the tape into the reader from the left side. The printing on the edge of the tape must be visible to you, and at your left as you sit at the front of the machine.

Make certain that the feed holes have engaged the pins of the pinwheel, and that the first code in the tape (with the exception of the Tape Feed codes) is behind the reader station.

4. Lower the reader card table.
5. When the tape is correctly inserted in the unit's reader, touch the START READ panel switch. The machine will type the encoded information at approximately 100 words per minute.
6. When the reader stops, remove the tape by raising the reader card table and sliding the tape out to the side.

ASSIGNMENT (Tape Reading)

To check the tape you prepared in ASSIGNMENT (Tape Preparation) on page 7, insert

it in the writing machine's reader according to the previous instructions. Touch START READ. ***

ERROR CORRECTION

Typists will agree that most typing errors are recognized immediately after being typed. If such an error is made while typing a document, a typist must erase the error and retype the correct information. When correcting a writing machine's tape, the TAPE FEED panel switch is used as the "eraser" of the incorrect code that is punched in the tape.

Your particular application may require its own error correction procedure. However, the basic theory of error correction for punched paper tape is explained on page 14 of the "FLEXOWRITER Writing Machine" -Technical Manual. Read the information, and, using your machine, prepare and correct a tape of the example given. ***

ASSIGNMENT (Error Correction)

Now do the following exercises to practice what you have learned. Remember to begin each tape with a Carriage Return code, and end it with a Stop code.

1. Prepare a tape of the sentence shown below. Type as far as machii and delete the second i so that the final tape will read machine. Finish typing the sentence. Remove the tape from the punch and read it to verify correction. ***

This is the Model SFD writing machiine.

2. Prepare a tape of the sentence shown below. Type as far as MMe and delete the necessary codes so that the final tape will read Method. Finish typing the sentence. Remove the tape from the punch and read it to verify correction. ***

FRIDEN has the MMethod.

3. Prepare a tape of the sentence shown below. Type as far as FRIDDDEN and delete the necessary codes so that the final tape will read FRIDEN. Finish typing the sentence. Remove the tape from the punch and read it to verify correction. ***

FRIDDDEN does it best.

ASSIGNMENT (Tape Preparation/Correction)

To practice what you have learned about tape preparation and correction, you are to prepare a tape of the material you typed on page 5, for ASSIGNMENT (Writing Machine).

1. Set the margin and tabs indicated on page 5. Place the punch switch in ALL position, touch TAPE FEED and remove any coded tape from the punch. ***
2. Using all the rules of tape preparation and correction that you have just learned, prepare a tape of the material shown on page 5, under Practice Copy #1. ***

3. When the tape is completed, remove it from the punch. Place the punch switch in OFF position and read the tape to check your work. Save the tape to use in the next assignment. ***

NOTE: If your final copy was not correct, try again until you have prepared a correct tape and a perfect copy. ***

TAPE REVISION (Updating)

If a tape is completed before the error is discovered, or if revision or updating of the original tape is required, there is no need to manually retype the entire tape. All of the correctly typed codes can be duplicated into a new tape, and the required additions or deletions made.

The rules for tape revision are simple:

1. Insert the tape to be revised into the reader of the writing machine. Set the necessary margin and tab stops. With the punch in ALL position, TAPE FEED for a leader strip. Touch START READ.
2. Follow the visual copy of the material to be revised. As the typing approaches the error, move the START READ switch up and down, allowing only one code to be read at a time. (The START READ switch stops the reader only as long as it is held down.)

Allow the last correct code to type. Stop the reader by holding the START READ switch depressed, then touch the STOP READ panel switch before releasing the START READ switch. This stops the reader until it is again put into automatic operation.

3. To add new material, type the information required. This will be recorded in the new tape.

4. To by-pass unwanted material in the original tape, turn the reader knob (see Figure D) forward (towards you), one notch for each code that you do not want to read.

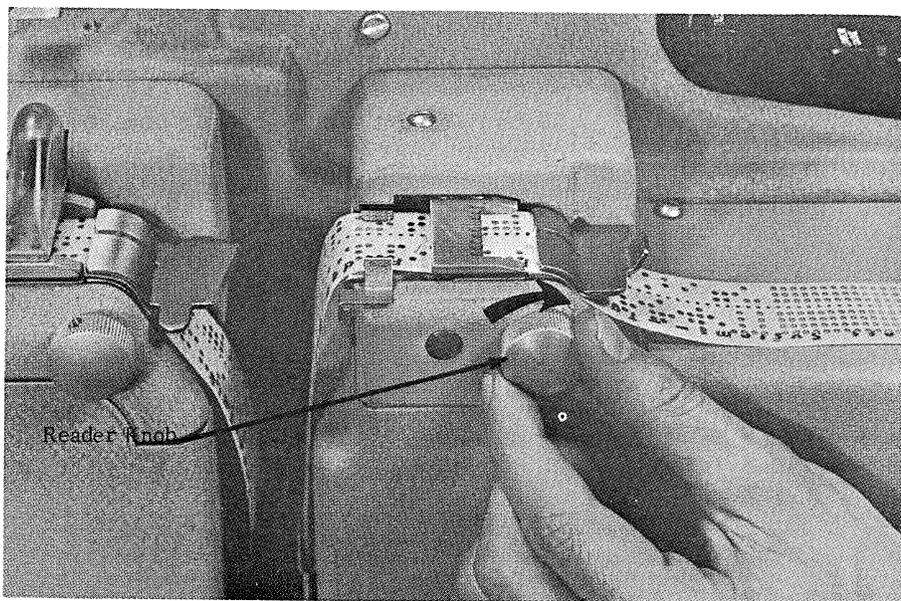


Figure D

5. Touch START READ and continue duplicating tape until the next revision is to be made.

NOTE: All codes produced by keys on the keyboard will duplicate automatically. All codes produced by panel switches, such as the final Stop code, must be reproduced manually.

ASSIGNMENT (Tape Revision/Updating)

Now do the following exercise to practice what you have learned:

1. With the punch in ALL position, prepare a tape of the following sentence. ***

This is the new FRIDEN writing machine

2. Duplicate the tape by reading it with the punch still in ALL, updating it to read: ***

This is the amazing FRIDEN writing machine.

3. Read the updated tape to verify your work. ***

CODE RECOGNITION

It is not necessary for you to memorize the code designations used in punched paper tape. But being able to locate a few key codes in the tape will make tape correcting and revising easier for you.

The easiest writing machine code to recognize is the code for the function of Carriage Return. It appears in the 8th channel of the tape (the channel farthest away from the writing machine when the tape is in the punch or reader).

When deleting an entire line of copy, you do not have to count and turn through each code to be deleted. You need only stop the reader after the completion of the last required line, then turn quickly through the codes until you find the next Carriage Return code. This will be the beginning of the next line. Touch START READ and continue revising the tape.

This procedure may also be used when you want to delete an entire line from a tape that you are preparing in the punch. Simply turn the punch knob away from you until the previous Carriage Return code appears in front of the punch die; depress TAPE FEED until all of the codes for that line are deleted.

With practice you will find that you are able to easily recognize many of the writing machine codes. You will find that it will be helpful to you to be able to recognize a Tab code and a Space code, in addition to the Carriage Return code.

ASSIGNMENT (Revision of Practice Copy)

To acquaint you further with the updating feature of the writing machine, you are to update the tape that you prepared for ASSIGNMENT (Tape Preparation/Correction) on pages 10 and 11.

1. With the punch in ALL position read this tape, updating it to read as indicated under Practice Copy #2 shown below. ***

Practice Copy #2

The Office-Rite Manufacturing Company announces a price and/or product change effective September 5, 1963. This is in keeping with our policy of providing our salesmen with complete and up-to-date information regarding our line of products. Changes cover the following equipment. Please adjust your catalogs accordingly and be sure to make a special effort to tell prospective customers about the new low price on the Style-Master Ambassador Desk.

4942L	F-631	Style-Master Unit File	43.00	50.95	32.75
4721	D-21	Style-Master Ambassador Desk	90.50	106.00	129.00
7450	D-59	Special Calculating Machine Desk	79.00	84.00	89.00

2. When you have finished, end the new tape with a Stop code and remove it from the punch. Turn the punch OFF and read the tape to verify your work. ***

NOTE: If your final copy was not correct - try the assignment again. ***

PHASE III - PUNCH CONTROL

One of the most versatile features of the writing machine is its ability to selectively punch information into a tape at the same time that it is producing a document. Selective punch control operates, logically, when the punch is in SELECT position. In this condition, the PUNCH ON and PUNCH OFF keylevers (or their respective codes, read from a tape) will turn the writing machine's punch on and off as required.

GENERAL

A brief explanation of punch control is found on pages 11 and 12 of the "FLEXOWRITER Writing Machine" -Technical Manual. Read the information under GENERAL, PUNCH CONTROL SWITCH, PUNCH CONTROL KEYLEVERS and PANEL INDICATING LIGHT. ***

If you are using a Model SPS or Model SPD, note the special instructions given below:

Model SPS

There are two punch ON keylevers on the Model SPS. When it is necessary to turn on the punch, the keylever labeled ON 1 is used.

Model SPD

In order to turn the machine's punch ON on a Model SPD, the ON 1 code must be preceded by a Lower Case code. An explanation of the operation of punch control on the

Model SPD is given in the "FLEXOWRITER Writing Machine, Model SPS, SPD" - Technical Manual on page 16. Read the information under POWER SWITCH and ON 1 - ON 2 KEYLEVER. ***

ASSIGNMENT (Manual Punch Control)

With the punch in SELECT position, you can manually select information to be punched in a tape by touching the PUNCH ON and PUNCH OFF keys on the keyboard as you type. This exercise illustrates the principle of manual punch control. The following key explains the programming symbols used in this exercise:

O	S	C	O	S
N --- Punch ON	P --- Space	R --- Carriage	F --- Punch OFF	T --- Stop
I		Return	F	P Code

1. Place the writing machine's punch switch in SELECT position, touch the PUNCH ON key and TAPE FEED. Remove any encoded tape from the punch. ***
2. Type the following, turning the punch on and off from the keyboard as indicated by the programming symbols. ***

OC	SO	S	SO		S	S	OC
NR This P F is P the P N FLEXOWRITER P writing P machine F . R							
I	F		I				F
OS		S	SO	S	S	S	C
It N P automatically P prepares P F a P variety P of P documents, P including R							
I			F				
	SO	SO	SO	S	SO	SO	CS
price P N lists, P F reports, P N insurance P policies, P F letters, P N etc. R T							
	I	F	I		F	I	P

3. As a result of this typing, you will have produced a document and a by-product select tape. Remove the tape from the punch, insert it in the writing machine's reader. Touch the PUNCH OFF key. Touch START READ to verify the information selected.***

The select tape should read as follows:

This FLEXOWRITER writing machine automatically prepares lists, insurance policies, etc.

AUTOMATIC PUNCH CONTROL

Automatic punch control is achieved by first producing a tape which includes information as well as punch control codes. This tape must be produced with the punch in ALL position so the punch control codes will perforate in the tape.

When this all tape is read in the writing machine with the punch in SELECT position, only the information preceded by a Punch On code will perforate in the by-product tape.

ASSIGNMENT (Automatic Punch Control)

1. With the punch in ALL position, type the same copy as you typed for ASSIGN-

MENT (Manual Punch Control) on page 14, inserting Punch On and Punch Off codes from the keyboard as before. ***

2. Your tape now contains both punch control codes and data. Remove the tape from the punch. With the punch switch in SELECT position, insert it in the reader and touch START READ. ***

3. This reading operation will automatically type the copy, and at the same time produce a by-product tape containing only selected information. End this tape with a Stop code. Remove it from the punch, and read it to verify the information selected. ***

PHASE IV - AUTOMATIC LETTERWRITING

In most writing machine installations, punch control is a completely automatic operation provided for by the programming of the input tapes or cards. Therefore, it is not generally necessary for a writing machine operator to study punch control in detail. However, if you would like additional practice, this phase of training covers a simple yet very effective application of the writing machine - automatic, personalized letterwriting with a by-product tape for the addressing of envelopes. Even though your machine may not be used for letterwriting, a study of the machine's features used in such an application will help you to better understand the principles of punch control.

A complete description of the set-up of an automatic letterwriting application is found on pages 31-34 of the "FLEXOWRITER Writing Machine" - Technical Manual. Read carefully the information under INTRODUCTION and PROGRAMMING. ***

ASSIGNMENT (Automatic Letterwriting)

In a writing machine application, the step-by-step planning of the application (programming) must be put into tape form before the final documents can be produced. You have just read an explanation of the programming for a letterwriting application. In this assignment you are to transfer this programming to a tape that will automatically type personalized letters and punch a by-product tape for envelopes.

Preparation of the Letter Tape

1. Follow the programming outlined on pages 31-34 of the "FLEXOWRITER Writing Machine" - Technical Manual, and prepare a letter tape of the letter shown on page 33 of the manual.

NOTE: Remember the punch switch must be in ALL position when this tape is punched. ***

2. When the tape is completed, end it with a Stop code and remove it from the punch. ***

Splicing the Letter Tape

The same letter tape will be used to type several letters. Therefore, it should be spliced in a continuous loop so that it will not have to be re-inserted in the reader

after each letter. It is very important that you splice the tape correctly or mis-reading may result. A writing machine tape is spliced as follows:

1. Cut off the leading and trailing edges of the tape, allowing about 1/2 inch of feed holes on both ends. Cut between codes so that the ends of the tape are not jagged.
2. Apply a small amount of writing machine tape cement to the leading edge of the tape.
3. Place the trailing edge of the tape on top of the leading edge so that approximately three Tape Feed codes overlap. Make certain that the feed holes are in perfect alignment.

Follow these instructions carefully and splice the letter tape that you have just prepared. ***

Operator Instructions

Save the letter tape you have just prepared for use in the next section. With this tape you can automatically prepare personalized letters by following these steps:

1. With letter tape in writing machine's reader, touch START READ. The reader will stop for the first line of the inside address.

Type Name of Addressee.

2. Touch START READ.
The reader will stop for the second line of the inside address.

Type Street Address.

3. Touch START READ.
The reader will stop for the third line of the inside address.

Type City, State.

4. Touch STOP CODE panel switch.

NOTE: The Stop code will appear in the select tape after each name and address. When the tape is used to automatically prepare envelopes, the Stop code will stop the reading operation so that the operator can insert a new envelope.

5. Touch START READ.
The reader will stop for the salutation.

Type Mr. (Mrs. or Miss, etc.) and last name of the Addressee.

6. Touch START READ.
The remainder of the letter will be written automatically by the letter tape.

Automatic Letter Preparation

Using the spliced letter tape prepared on pages 15 and 16, follow these instructions for setting up your writing machine and automatically preparing personalized letters.

1. Set margin and tab stops for the letter as indicated on page 33 of the "FLEXO-WRITER Writing Machine" -Technical Manual. ***
2. Place the machine's punch switch in SELECT position. ***
3. Insert the spliced letter tape in the machine's reader with the splice positioned at the reader station. Insert letterhead in the platen of the machine.
4. Following Operator Instructions, 1-6 as shown on page 16, prepare a letter addressed to: ***

Mr. William J. Thompson
4580 University Avenue
Chicago 23, Illinois

5. Because the tape is spliced in a continuous loop, it will now be back in the starting position.

Insert a new sheet of letterhead in the writing machine's platen and, following the same instructions, prepare two (2) more letters, manually addressing them to two different persons. ***

Automatic Envelope Preparation

While the letters were being typed, the writing machine was automatically punching a select tape of names and addresses. This tape will be used to automatically type envelopes for the letters.

1. When the three (3) letters are complete, touch PUNCH ON. TAPE FEED and remove the select tape from the punch. ***
2. Touch PUNCH OFF. Insert an envelope in the platen of the writing machine, adjusting the margin to position an address properly on the envelope. ***
3. Place the select tape in the reader. Touch START READ. ***
4. The reader will stop after typing the first envelope. Remove this envelope, insert a new one and touch START READ. ***
5. Continue this procedure until all three addresses have been typed on envelopes. ***

You have now completed an actual writing machine application using many of the machine's features previously discussed. If any part of this application did not function correctly, review carefully the material in the manual and the instructions given in this text. Find out where you made an error and then try the assignment again, until you have three perfect letters and envelopes. ***

PHASE V - EDGE-PUNCHED CARDS

Edge-punched cards, like punched paper tape, control the writing machine for automatic operation. They are used in many applications because they offer greater ease of handling, labeling and filing. The following exercises will give you a basic knowledge

of the preparation and use of edge cards. The specific use of cards in your system, and the detailed instructions for their preparation will be explained to you by your FRIDEN Representative.

Edge-punched cards are available in two forms: continuous cards and pre-cut unit record cards. Follow the reading and machine assignments given under the heading of the type of card you are using in your writing machine application.

CONTINUOUS EDGE-PUNCHED CARDS

A brief explanation of edge-card features is found on pages 19 and 20 of the "FLEXO-WRITER Writing Machine" -Technical Manual. Read the material under EDGE-PUNCHED CARD READER AND PUNCH. ***

Insertion of Edge Cards in Writing Machine Punch

To insert continuous edge cards in the writing machine's punch, note Figure 21 on page 20 of the "FLEXOWRITER Writing Machine" -Technical Manual and follow these steps:

1. Remove tape from the punch.
2. Make certain that the tape hold down arm is closed.
3. Place the pack of cards in the card hopper or on the machine stand at the rear of the punch. The pre-punched feed holes must be at your right as you sit in front of the machine.
4. Slide the first card into the punch, under the upper punch plate (as shown in Figure 21). Move the card forward until the feed holes engage the pinwheel just in front of the punch plate.
5. Turn the feed knob forward to advance the card until it covers the small micro-switch at the left of the punch table.
6. With the punch switch in ALL position, touch and release the TAPE FEED panel switch. (Do not hold the TAPE FEED switch down as when feeding tape through the punch.)

The card is now positioned to punch the first code.

ASSIGNMENT (Continuous Edge Cards)

When preparing continuous edge cards, you can type the information to be punched into the card on a pressure sensitive label. This label will provide identification for the card as well as a proof copy of the information typed.

Preparation of Continuous Edge Cards

1. Insert continuous labels in the platen of your writing machine. ***
2. Insert continuous edge cards in the machine's punch. TAPE FEED to position the first card. ***

3. With the punch in ALL position, carriage return and type your name and address on the label, simultaneously punching an edge card. ***
4. End the card with a Stop code and touch TAPE FEED to position the next card. ***
5. Manually turn the platen to position the next label. Type several lines of copy simultaneously punching the card. Make an error and correct it by deleting the code or codes from the card.

NOTE: Remember that you must use AUX CODE and the keylever C to delete codes in an edge card. If you have more than one code punched incorrectly, you must use the AUX/C combination as many times as you have incorrect codes to delete. ***

6. Finish the card. End it with a Stop code. Touch TAPE FEED. ***
7. Separate the punched cards from the pack by tearing the perforation at the rear of the punch table (see Figure E, point A). ***
8. To remove cards from the punch, place your finger over the punch table micro switch (see Figure E, point B). Touch TAPE FEED. Keep your finger in position over the micro switch until the last card is completely out of the punch. ***

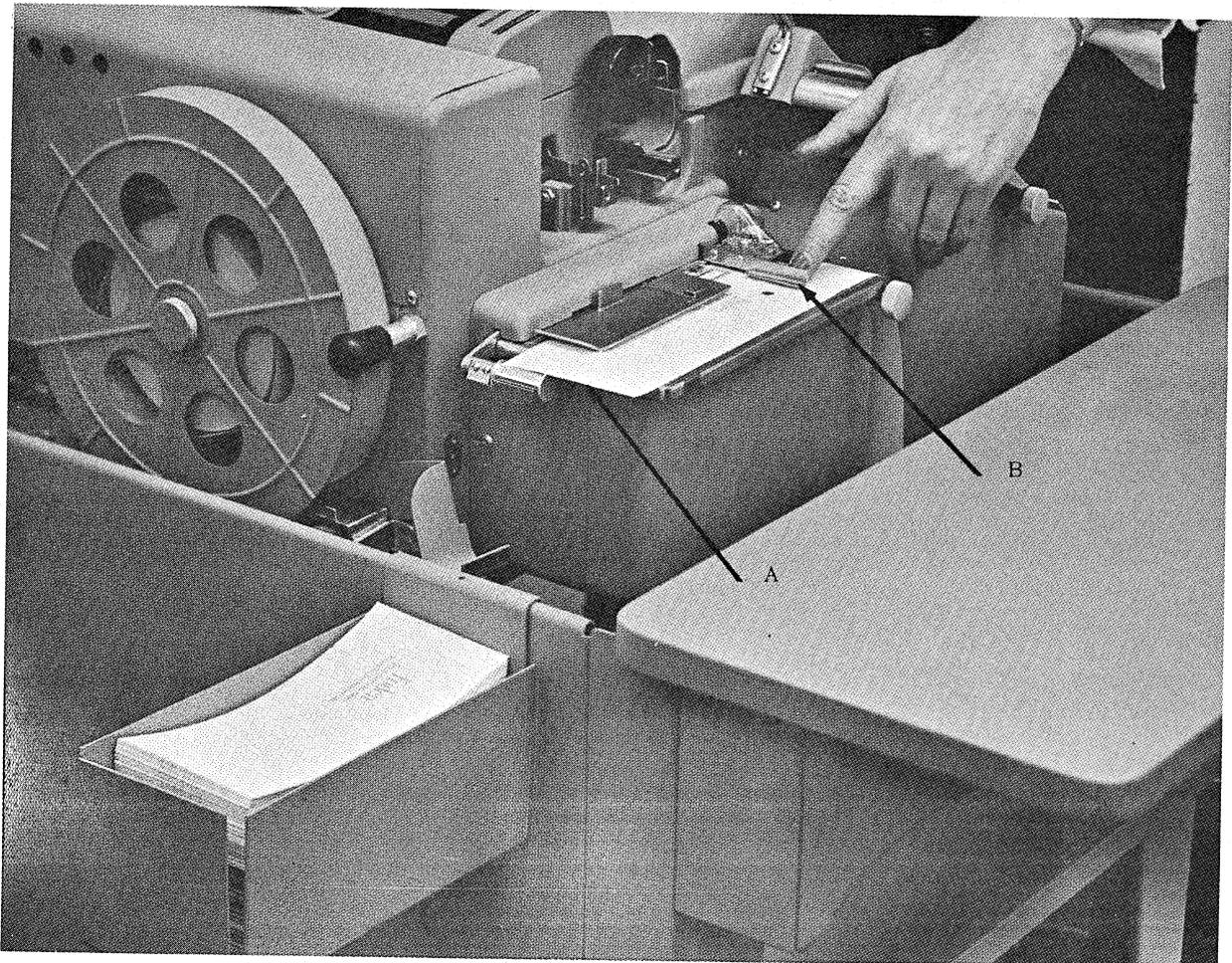


Figure E

Cutting and Labeling Continuous Edge Cards

Continuous edge punched cards must be cut into individual unit records for ease of filing and reading. A specially designed card cutter must be used to perform this operation accurately. If cards are not cut correctly, the feed holes will suffer undue wear and incorrect reading will result. Follow these steps when cutting and labeling edge cards:

1. Insert the leading card of a continuous pack of edge-punched cards under the guide at the rear of the card cutter (see Figure F, point A).

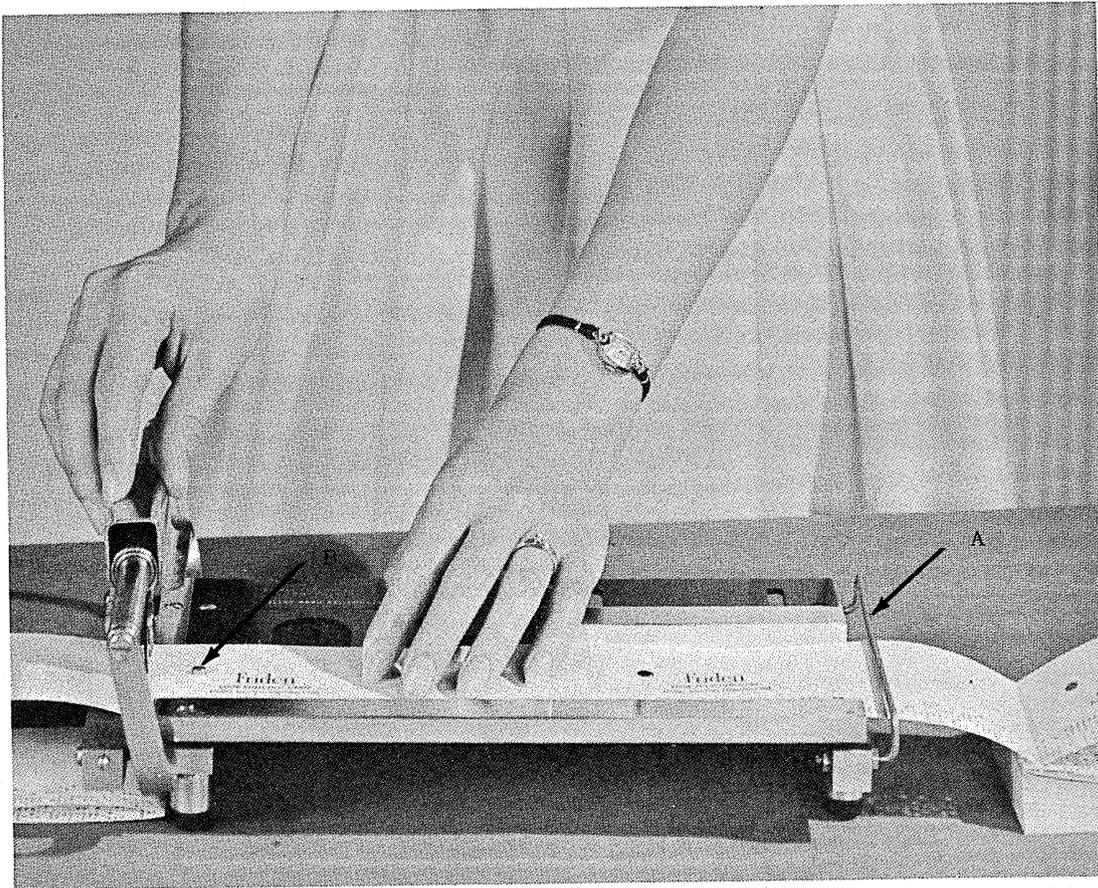


Figure F

2. Draw the card across the cutter table and position as shown in Figure F. Make sure that the large micro switch hole on the card is over the dowel on the cutter plate (see Figure F, point B), and the corresponding pin-feed hole is over the small pin on the cutter table.

3. Hold the card down firmly on the cutter table, and move the cutter across the leading edge of the card. The blade will cut a small strip out of the card at the perforation.

4. Disengage the cut card from the positioning pins, advance it until the leading edge of the next card is over the positioning pin, and repeat steps 2 and 3.

NOTE: Be sure that there is a blank position in the card on either side of the perforation before you cut. Some cards may be two or three units long.

Cards may be labeled before cutting or immediately after cutting. Do not let a pile of cards accumulate and then try to label them. Mistaken identification may result!

Following the previous instructions, cut and label the two cards prepared in the assignment on pages 18 and 19. ***

Reading Continuous Edge Cards

An explanation of the required procedure for reading edge cards is given in the "FLEXOWRITER Writing Machine, Model SFD" -Operator Instruction Manual in the section titled Tape and Card Readers. Read these pages carefully. ***

Insert one of the cards you prepared for the assignment on pages 18 and 19, in the reader of your writing machine. Touch START READ. ***

Read both of the cards prepared in the assignment to verify the information punched. ***

PRE-CUT UNIT RECORD CARDS

A brief explanation of edge card features is found on pages 19 and 20 of the "FLEXOWRITER Writing Machine" -Technical Manual. Read the material under EDGE-PUNCHED CARD READER AND PUNCH. ***

Insertion of Unit Record Cards in Writing Machine Punch

To insert pre-cut unit record cards in the writing machine's punch, note the example shown in Figure G, and follow these steps:

1. Remove tape from the punch.
2. Make certain that the tape hold down arm is closed.
3. Slide the unit record card into the punch from the rear. Pre-punched feed holes should be at the right of the punch, and the card should go under the upper punch plate (see Figure G).

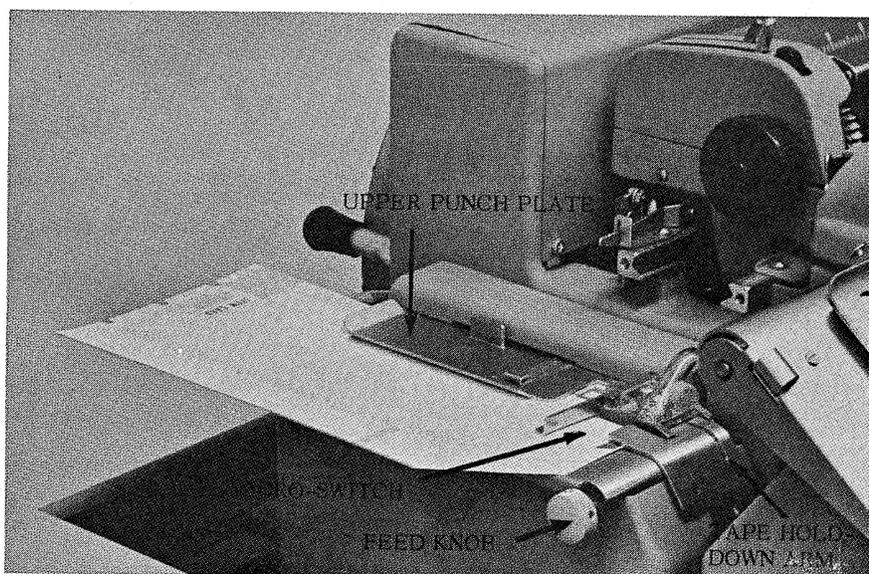


Figure G

4. Move the card forward until the feed holes engage the pinwheel just in front of the punch plate.

5. Turn the feed knob forward to advance the card until it covers the small micro switch at the left of the punch table.

6. With the punch switch in ALL position, touch and release the TAPE FEED panel switch. (Do not hold the TAPE FEED switch down as when feeding tape through the punch.)

The card is now positioned to punch the first code.

ASSIGNMENT (Pre-Cut Unit Record Cards)

Now do the following exercise to practice this operation:

1. Insert a pre-cut unit record card in the punch. Tape Feed to position the card. ***
2. Using plain paper in the platen of the writing machine's carriage, return and type your name and address, simultaneously punching a unit record card. End the card with a Stop code. ***
3. To remove card from the punch, place your finger over the punch table micro switch (see point B, Figure E on page 19). Touch TAPE FEED. Keep your finger in position over the micro switch until card is completely out of the punch. *** Identify the card.***
4. Insert a new card in the machine's punch. TAPE FEED to position the card and type several lines of copy. Make an error and correct it by deleting the code or codes from the card.

NOTE: Remember that you must use AUX CODE and the keylever C to delete codes in an edge card. If you have more than one code punched incorrectly, you must use the AUX/C combination as many times as you have incorrect codes to delete. ***

5. Finish the card and end it with a Stop code. Remove the card from the punch and identify it. ***

Reading Pre-Cut Unit Record Cards

An explanation of the required procedure for reading edge cards is given in the "FLEXOWRITER Writing Machine, Model SFD" -Operator Instruction Manual in the section titled Tape and Card Readers. Read these pages carefully. ***

Insert one of the cards you prepared for the previous assignment in the reader of your machine. Touch START READ. ***

Read both of the cards prepared in the assignment to verify the information punched. ***

CONCLUSION

You have now completed the suggested training on the FLEXOWRITER writing machine, Model SFD. Additional training is provided in the Supplement For Use With Model SPS and SPD.

If there is some part of this training guide that you do not understand, review the required reading and machine assignments carefully. Your FRIDEN Representative will be able to give you additional help, and will advise you of further details concerning your specific application.

PHASE VI - SUPPLEMENT FOR USE WITH MODELS SPS, SPD

The preceding outline was based on the Model SFD. Special instructions were given whenever the basic operation of the MODELS SPS, SPD differed from operation of the Model SFD.

Although all writing machines are basically similar in operation, the models SPS and SPD offer certain machine features which provide greater versatility in programming and performing systems applications. You, as an operator, will not have to know these features in detail. If you are required to use them in an application, you will be told by your FRIDEN Representative exactly when and under what condition to do so.

The following exercises cover the Models SPS and SPD features of TAPE SKIP and manual NON PRINT. They are designed to show you how the machine operates when these features are used.

The automatic Non Print and Field Control features are not discussed, as they will be used only in the programming of the writing machine. Likewise, no attempt is made to explain the operation auxiliary input or output units. Their use is determined exclusively by your application. Additional instruction on these units, and on the specific requirements of your individual application, will be given after you have mastered the basic operational procedures.

TAPE SKIP

The TAPE SKIP panel switch is used when data already in a tape is to be by-passed or cycled through the writing machine's reader. Read the explanation of TAPE SKIP on page 12 of the "FLEXOWRITER Writing Machine, Models SPS and SPD" -Technical Manual, and the explanation of TAPE SKIP RESTORE on page 14. ***

ASSIGNMENT (Tape Skip)

The following programming codes are used in this assignment:

C	S
R --- Carriage Return Code	P --- Space Code
S	S
T --- Stop Code	R --- Skip Restore Code
P	

1. With the punch in ALL position, type the following copy inserting programming codes where indicated: ***

```

C          S          C
R Acme P Corporation R

S          S          S          C S
T 223 P Adams P Street R R
P

          S          C S
Dallas, P Texas R T
P

```

2. Remove the tape from the punch. Insert it in the reader. With the punch still in ALL position, touch START READ. ***

3. When the reader stops after typing Corporation, touch TAPE SKIP. Notice that the information skipped over will not be punched in the by-product tape. ***

4. Read the original tape again, with the punch still in ALL. When the reader stops after typing Corporation, touch START READ. This time the street address will read as well as punch. ***

5. Touch TAPE FEED, remove the by-product tape from the punch and discard it. Save the original tape for use in the next assignment. ***

MANUAL NON PRINT

Manual non print is used primarily to duplicate tape or edge cards. Under normal start read control of the Flexowriter, many codes will not reproduce. Under the control of the NON PRINT panel switch, all codes will reproduce.

Read the explanation of NON PRINT on pages 11-12 of the "FLEXOWRITER Writing Machine, Models SPS and SPD" -Technical Manual. ***

ASSIGNMENT (Manual Non Print)

The tape prepared for the previous assignment contains Skip Restore and Stop codes which will not reproduce under start read control. These codes will, however, reproduce with manual NON PRINT.

1. Insert the tape prepared for step 1 of ASSIGNMENT (Tape Skip) in the writing machine's reader. ***

2. Place the machine's punch switch in ALL position. ***

3. Duplicate the tape by touching the NON PRINT panel switch.

NOTE: Remember the reader will stop when a Stop code is read, but the Stop code will be reproduced. Touch NON PRINT again to continue duplicating the tape. ***

4. When the reader stops on the last Stop code, tape feed and remove the tape from the punch. ***

5. Compare the two tapes, you will see that they are identical. ***

Whenever you have to duplicate writing machine tapes or cards, be sure to use the NON PRINT panel switch!

CONCLUSION

You have now completed the suggested field training on the FLEXOWRITER Writing Machine, Models SPS and SPD. We hope we have offered you material that will help you operate your machine with more competence and satisfaction.

If there is any part of this outline, or any phase of your own application that you still do not understand, be sure to ask your FRIDEN Representative to explain it to you.

FRIDEN CODE CHART

STANDARD TAB CARD PUNCHING POSITIONS										STANDARD TAPE CHANNEL NUMBERS					FLEXOWRITER MODEL SFD	FLEXOWRITER MODEL SPS	FLEXOWRITER MODEL SPD							
12	11	0	1	2	3	4	5	6	7	8	9	8	7	6	5	4	FEED	3	2	1				
																						(ZERO) 0 - 1	0	(ZERO) 0 - 1
																						1 - _	1	1 - _
																						2 - @	2	2 - @
																						3 - #	3	3 - #
																						4 - \$	4	4 - \$
																						5 - %	5	5 - %
																						6 - '	6	6 - ' (
																						7 - &	7	7 - ?
																						8 - *	8	8 - *
																						9 - (9	9 - (
																						a - A	A	a - A
																						b - B	B	b - B
																						c - C	C	c - C
																						d - D	D	d - D
																						e - E	E	e - E
																						f - F	F	f - F
																						g - G	G	g - G
																						h - H	H	h - H
																						i - I	I	i - I
																						j - J	J	j - J
																						k - K	K	k - K
																						l - L	L	l - L
																						m - M	M	m - M
																						n - N	N	n - N
																						o - O	O	o - O
																						p - P	P	p - P
																						q - Q	Q	q - Q
																						r - R	R	r - R
																						s - S	S	s - S
																						t - T	T	t - T
																						u - U	U	u - U
																						v - V	V	v - V
																						w - W	W	w - W
																						x - X	X	x - X
																						y - Y	Y	y - Y
																						z - Z	Z	z - Z
																						SPACE	SPACE	SPACE
																						- - "	-	- - "
																						/ - ?	/	/ - ?
																						STOP	STOP	STOP
																						% - -	%	% - -
																						, - ,	,	, - ,
																						. - .	.	. - .
																						NON-PRINT (AUX. SPACE)	NON-PRINT (AUX. SPACE)	NON-PRINT (AUX. SPACE)
																						PRINT-RESTR. (AUX. ZERO)	PRINT-RESTR. (AUX. ZERO)	PRINT-RESTR. (AUX. ZERO)
																						PUNCH ON	ON-1	ON 1-ON 2
																						UPPER CASE		UPPER CASE
																						/ - :	&	& - ;
																						TAB	TAB	TAB
																						CONTROL	CONTROL (AUX. 2)	CONTROL (AUX. 2)
																						PUNCH OFF	PUNCH OFF	PUNCH OFF
																						DATA SELECTOR (AUX. 3)	DATA SELECTOR (AUX. 3)	DATA SELECTOR (AUX. 3)
																						FORM FEED (AUX. L)	FORM FEED (AUX. L)	FORM FEED (AUX. L)
																						PI 1 (2, 8, SP)	PI 1 (2, 8, SP)	PI 1 (2, 8, SP)
																						PI 2 (2, 8, -)	PI 2 (2, 8, -)	PI 2 (2, 8, -)
																						BACK SPACE	PI 3 (2, 8, 0) OR BACK SPACE	PI 3 (2, 8, 0)
																						PI 4 (AUX. 1)		
																						PI 5 (AUX. A)	PI 5 (AUX. A)	PI 5 (AUX. A)
																						ADDRESS IDEN. (AUX. J)	ADDRESS IDEN. (AUX. J)	ADDRESS IDEN. (AUX. J)
																						SKIP RESTORE (AUX. 1)	SKIP RESTORE (AUX. 1)	SKIP RESTORE (AUX. 1)
																						LOWER CASE		LOWER CASE
																						ON-2		
																						FC ON	FC ON	FC ON
																						TAPE FEED	TAPE FEED	TAPE FEED
																						CAR. RET.	CAR. RET.	CAR. RET.

12 11 0 1 2 3 4 5 6 7 8 9

EL X O CH 8 FEED 4 2 1

CHANNEL NUMBERS

If coded Back Space is required on Models SPS and SPD, assign Code 2-4-6.
 When Model TCPC is used with Models SPS and SPD, Automatic Duplication Code is, 1-3-4-5-6.
 When Synchro-Duplex Reading Units are used with writing machines Read Code is, 2-3-4; Skip Code is, 1-3-4-6-7.