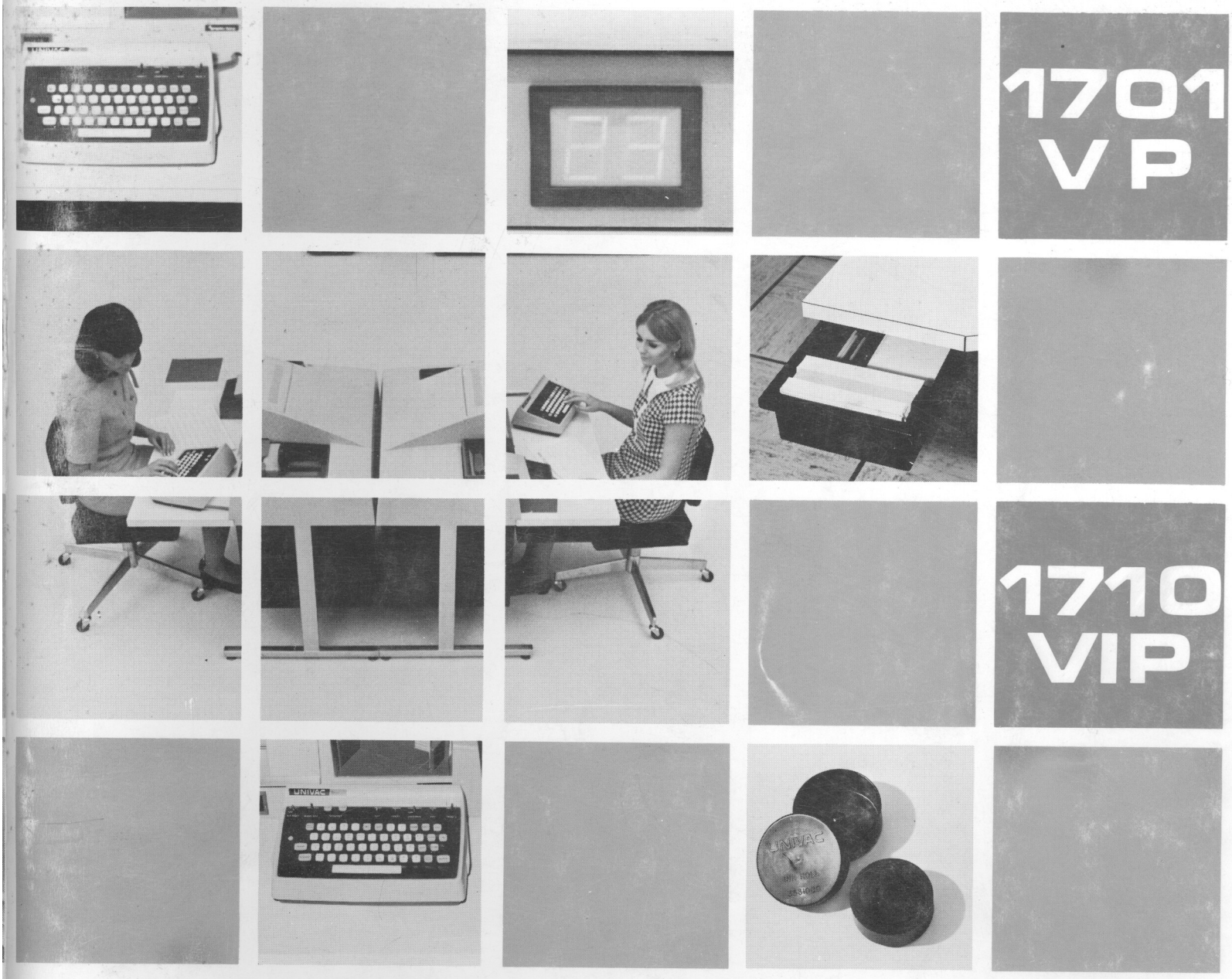

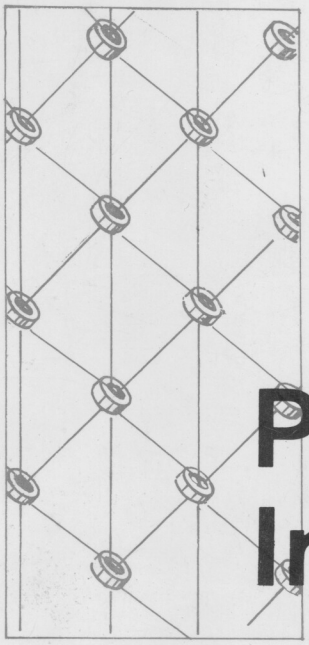

Programmed Instruction

UNIVAC

C IN6227

FOREWORD

The primary objective of this course is to train experienced key punch operators in the use of the VP and VIP. The time required for an experienced operator to complete the course will average about three hours, if the Express Stops are fully utilized.

A secondary objective is to train typists and other keyboard operators to use the VP. The time required for these non-experienced people to complete the material will average about nine hours. As evidence of achievement of these objectives, the student will be able to begin productive key punch work at the end of the course. This course is not intended to produce or develop keyboard skills. It will take the operator a few days to fully adjust to the new machine.

Developmental and validation testing of this course were conducted with more than 100 students from both of the above groups. Students were able to begin production key punching immediately after completion of the course.

This book is intended to be expendable. The student may, therefore, write in the book and either keep it, or throw it away. The booklet in the back of this PI manual is intended for the student to keep in the VP or VIP drawer for reference.

This course will work best if the student has either a 1701 or a 1710 to use while taking the course, however, it is possible to successfully complete the course without a machine.

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UE 606

EXPRESS STOP 1

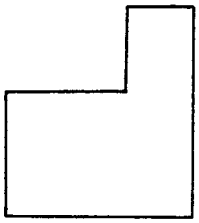
This is a self-instruction program designed to introduce you to the UNIVAC 1701 Verifying Punch (VP) and the 1710 Verifying Interpreting Punch (VIP).

EXPRESS STOPS are inserted throughout this program to test for previous knowledge, so that <u>you may skip material with which you are already familiar.</u>

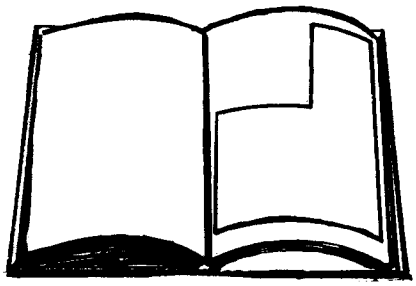
If you have taken this type of programmed instruction course before and feel certain that you are familiar with this teaching method, you may skip to EXPRESS STOP 2., page 6. If you are not familiar with this method, continue with the next frame.

A

In the back of the book you will find a mask shaped like this.



Detach the mask and place it on the page as shown below.



B CHECK the phrase that will complete the following sentence correctly. The sliding mask is used to: ☐ cover the correct answer until you have written your own. ☐ Let you see the correct answer before you have written your own. **When a response is called for write it in the book.**	CORRECT ANSWER COLUMN. cover the correct answer until you have written your own
C When you have completed the <u>last</u> frame on the page, TURN TO THE NEXT PAGE AND PLACE THE MASK AT THE TOP. This procedure is recommended to insure that as you turn to the next page you: ☐ will see the correct response on that page. ☐ will not see the correct response on that page.	will not see . . .
D Do we recommend that you write your response to a frame before or after you have looked at the correct response? ☐ before ☐ after What do you do in order to expose the correct response to a frame? _____	before Slide the mask down. (or equivalent response)

E If a frame presents several blanks together, then the correct response calls for one word in each blank. However, because the number of blanks can "give away" the correct response, sometimes only one blank is used. Thus, one blank does not necessarily mean that only _____ is required.	one word (or a single word)
F Sometimes you will be required to choose one or more of several multiple-choice alternatives. For example, CHECK the correct statement(s) below. ☐ A blank frequently contains one or more frames. ☐ A frame frequently contains one or more blanks.	A frame frequently contains one or more blanks.
CHECK the correct statement(s) below. 1. ☐ A frame always requires just one response. 2. ☐ A frame may require just one response. 3. ☐ A frame may require one or more responses.	2. and 3.
G CHECK the appropriate box in the sentence below: The frames to which you have responded so far have been relatively (☐ easy, ☐ hard).	easy
WRITE the appropriate word in the blank below: Thus, in responding to the frames throughout the program, you will probably have _____ (little/great) difficulty.	little

H From responding to the previous frame, you can guess that when you see two or more choices with boxes you are to: ☐ check a box. ☐ write in a word. When you see two choices within parentheses preceded by a blank you are to _____(check/write out) your response.	check a box. write out
I As you progress through the text, you will be required to respond to more complex items that you will master through a series of easily understood steps. Thus, it is expected that you will respond correctly: ☐ only to the initial frames of the text. ☐ to most of the frames throughout the text.	to most of the frames throughout the text.
J An important feature of self-instruction is that it enables you to proceed at your own pace. Results obtained using self-instruction indicate that successful learning does not depend upon a fast or slow rate of progress through the text. Thus you should: ☐ move along at a fairly fast rate. ☐ move along at a fairly slow rate. ☐ move along at your own best rate. ☐ try to compete with the rates of others.	move along at your own best rate

K Which of the statements below describe the teaching techniques of this text? (CHECK ONE OR MORE.) ☐ enables you to respond to most items correctly ☐ permits you to move through material at your own rate ☐ proceeds from initially simple material to complex material	All three should be checked.
L Be certain to read every sentence in a frame. Do not stop reading after you have made all the required responses. New information often follows the last response that you are asked to make. Therefore, it is important to read _____ in a frame.	everything
M In some frames your response may not be exactly the same as the response given in the correct answer column. In most cases equivalent responses _____ _____.	are acceptable
N Now that you have mastered the fundamentals of learning efficiently from a self-instructional text, we will begin the study of the UNIVAC 1701 (VP) and 1710 (VIP). SLIDE THE MASK TO THE TOP, THEN TURN THE PAGE AND BEGIN THE PROGRAM.	GO ON TO NEXT PAGE.

EXPRESS STOP 2

Experienced key punch operators or other data processing personnel who have a working knowledge of key punching, card codes, and card format may skip to frame 29 on page 24. Others should continue with the next frame.

EXPRESS STOP 3

What is the purpose of a key punch?

_____

_____

_____

_____

_____

To transcribe data from source documents to unit record cards

If you have answered correctly skip to EXPRESS STOP 4 on page 8.

1.

Business data comes in many forms --handwritten, typed, stamped, etc. These kinds of data _____(can/cannot) be easily handled by automatic _____ processing machines.

cannot

data

Which of the following documents was designed for automatic data processing machines?

- ☐ sales slip
- ☐ punched card

punched card

Sales slips, invoices and similar forms are called source documents.

Punched cards are handled by automatic _____ _____ _____.

data

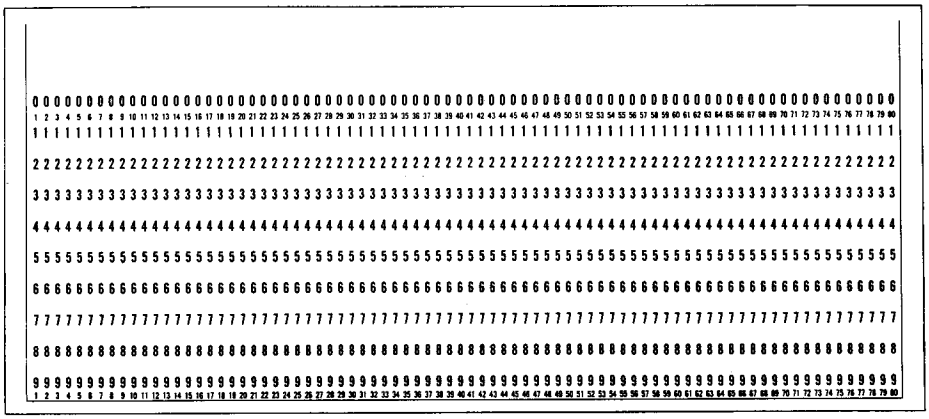
processing machines

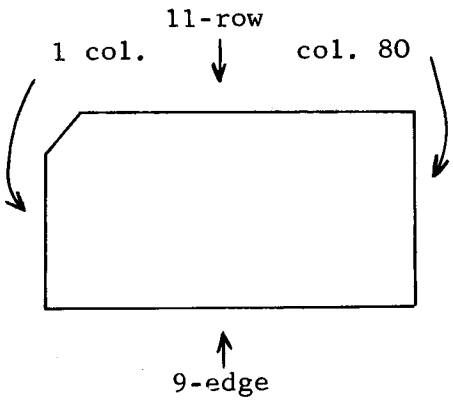
2. Punched _____, or unit record cards, as they are called, can be easily and rapidly: ☐ punched ☐ handled ☐ read ☐ all of the above by automatic data processing machines.	cards all of the above
3. Holes or combinations of holes in a column of a card represent alphabetic, numeric or special characters. These combinations of holes are a kind of code. What do data processing machines read? ☐ writing ☐ punching Punched cards are also called unit record _____.	punching cards
4. A key punch is used to encode data in a _____ record card so that it can be r_____ by machines. It transcribes from source d_____ to unit _____ _____.	unit read documents record cards
5. What is the purpose of a key punch? _____ _____ _____	To transcribe data from source documents to unit record cards

EXPRESS STOP 4

On the card image below indicate:

1. The 11-row (punch)
2. Column 80
3. The 9-edge
4. Column 1-edge (The card below is reduced in size.)





If correct skip to EXPRESS STOP 5 on page 12.

6.

Unit record cards are of a standard size and most of them have:

- ☐ 60 columns
- ☐ 70 columns
- ☐ 80 columns

80 columns

in which data can be _____

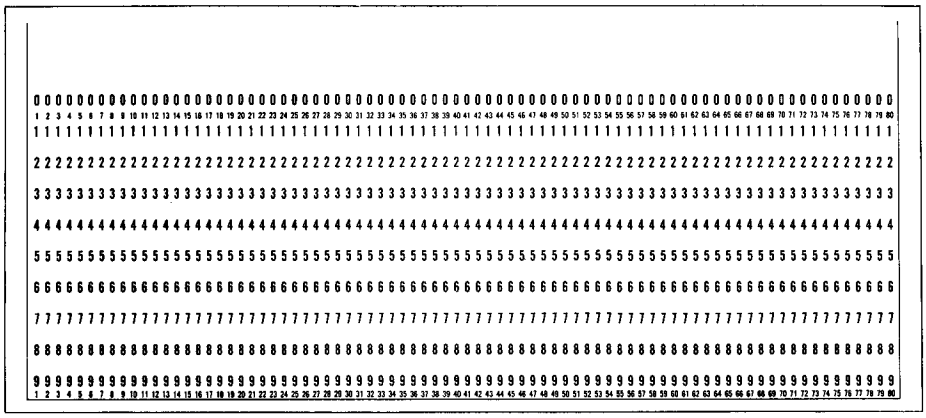
recorded or punched

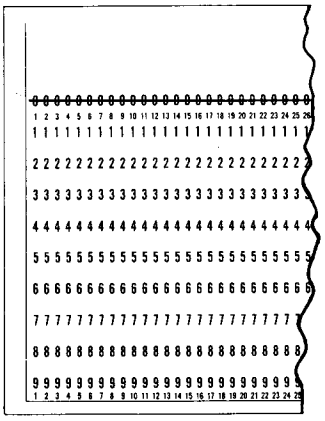
7

There are rows containing a single digit printed all the way across the card.

On the card below draw a line through the 0-row.

(reduced size)





8.

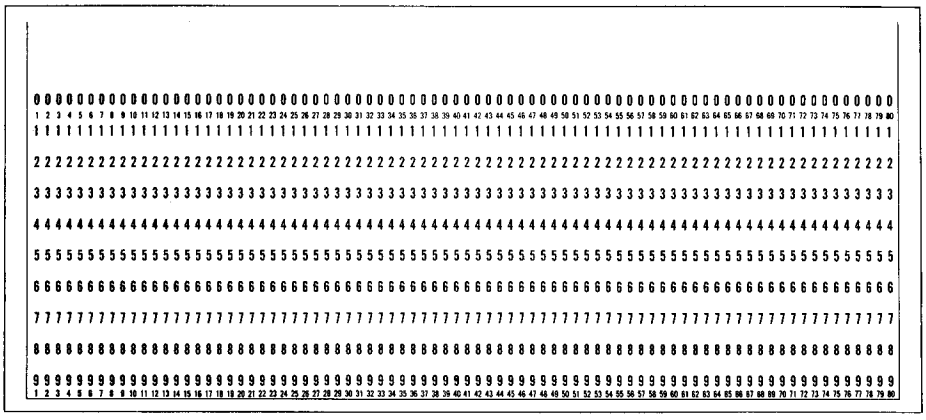
A punched card is an arrangement of rows and _____.

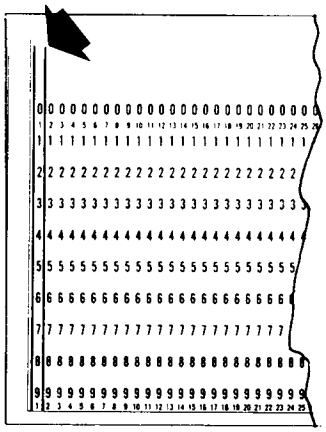
columns

On the card below how many rows can be seen?

10 (0-9)

(reduced size)



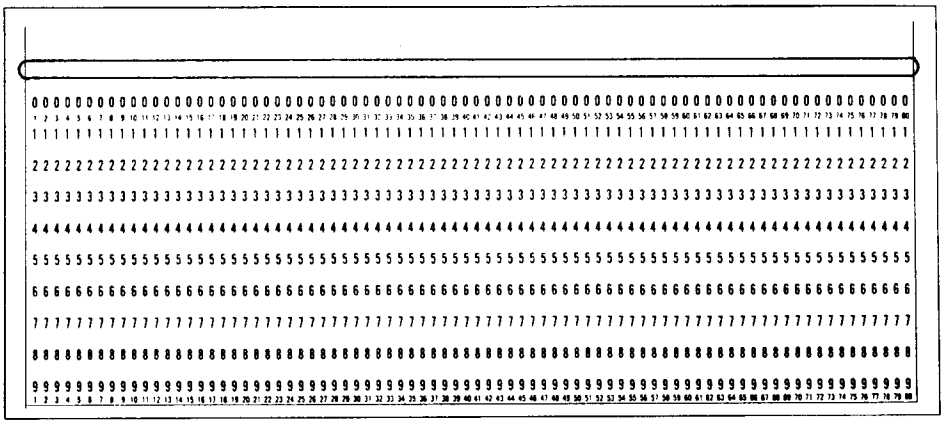


9.

In addition to the 10 printed rows there are two rows which are not printed. The row circled on this card is the _____. Sometimes this is called the X-row.

The row above the 11 or X-row is the _____, also known as the Y-row.

(reduced size)



11-row

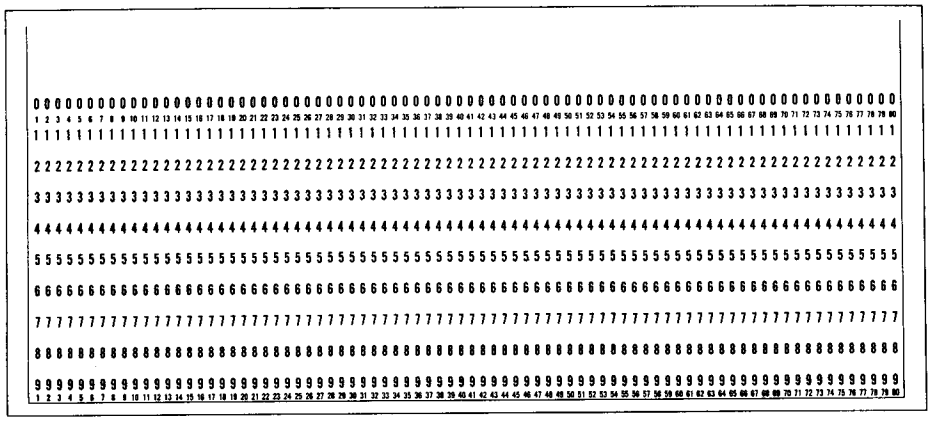
12-row

10.

Each edge of a card is referred to by the r _ _ or c _ _ _ _ _ which is nearest to it.

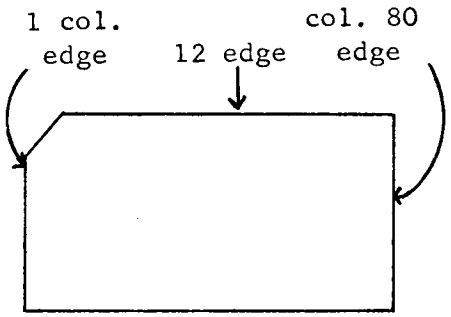
On the card below label the column 1-edge, the 9-edge and the 12-edge and the column 80-edge.

(reduced size)



row

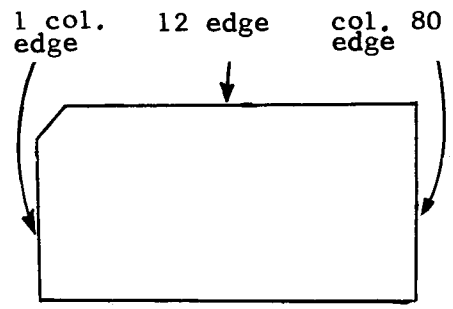
column



11.

In the space below draw the outline of an 80 column card and label:

1. Column 1-edge
2. Column 80-edge
3. 9-edge
4. 12-edge

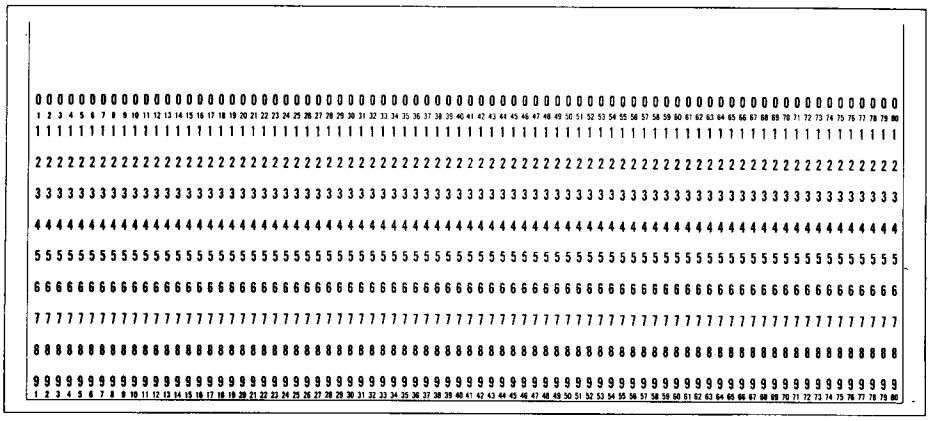


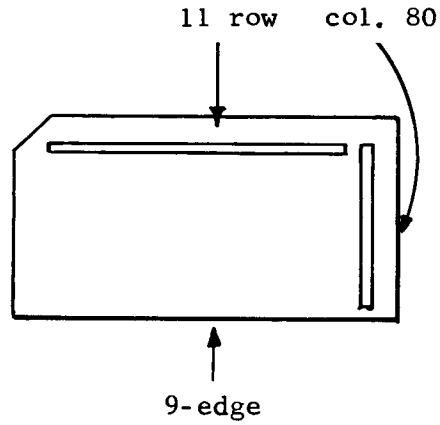
12.

On the card below indicate the following:

1. The 11-row
2. Column 80
3. The 9-edge

(reduced size)



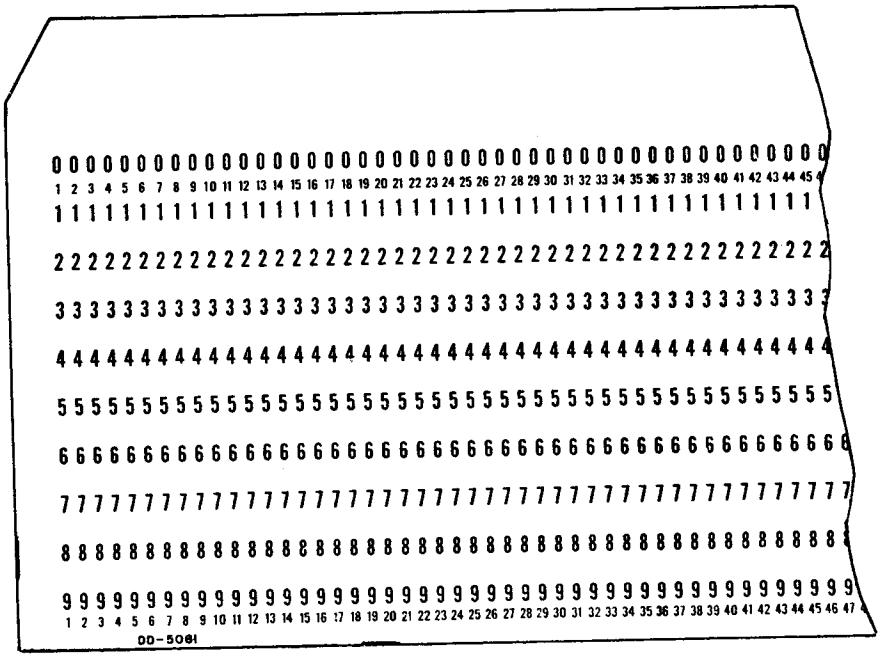


EXPRESS STOP 5

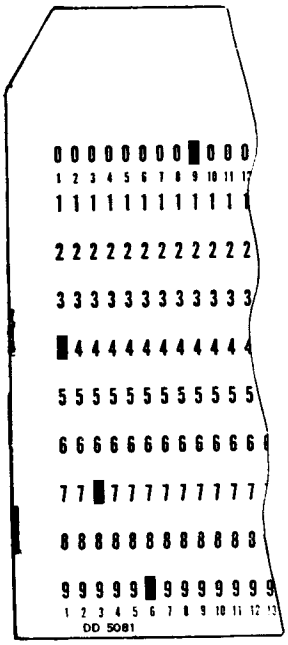
On the card below mark the punching necessary to represent:

1. A "4" in column 1
2. A "7" in column 3
3. A "9" in column 6
4. A "0" in column 9

(Actual size of partial card)



If you answer correctly, SKIP TO EXPRESS STOP 6 on page 15.



13.

Numeric punching in a card is (choose A or B)

☐ quite difficult to understand.
☐ quite easy to understand.

quite easy

Only one punched hole is necessary to represent any _____ from 0 to 9. Each 1 digit number requires a separate column.

number

How many 1 digit numbers can be put in a card?

80

14.

How many digits long is the longest number you can put in a card?

- ☐ 60
- ☐ 80
- ☐ 160

80 digits

15.

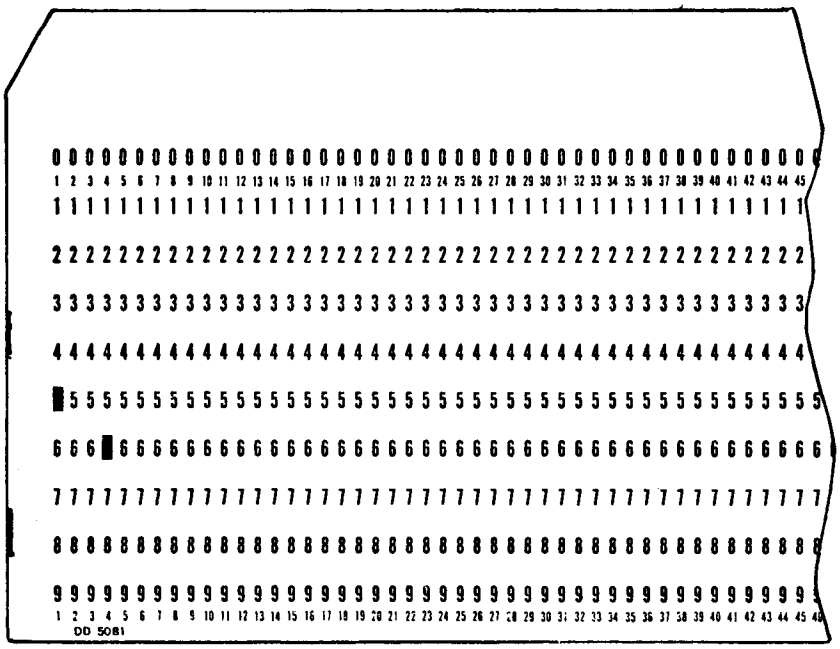
The rows of numbers on a card directly represent the value of the punch in that position. For example, on the card below there is a "5" in column 1 and a "6" in column 4.

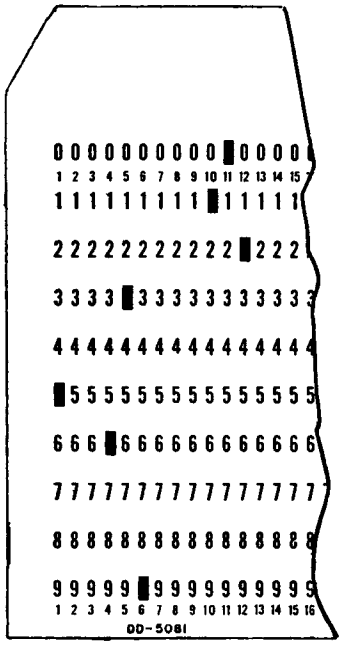
Put a "3" in column 5 below.

Put a "9" in column 6 below.

Put the number "102" in columns 10-12.

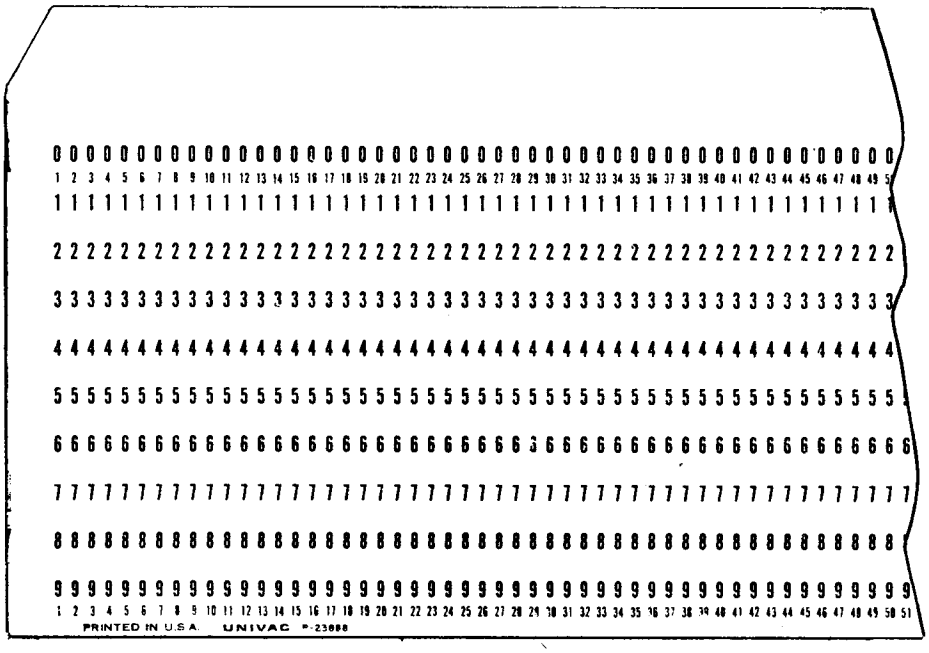
(Actual size of partial card)

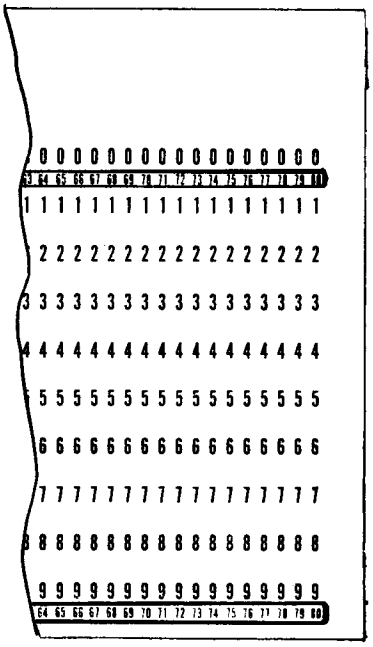




16.

The smaller numbers on the card indicate the column numbers. Circle them on the card below. (Actual Size)





17.

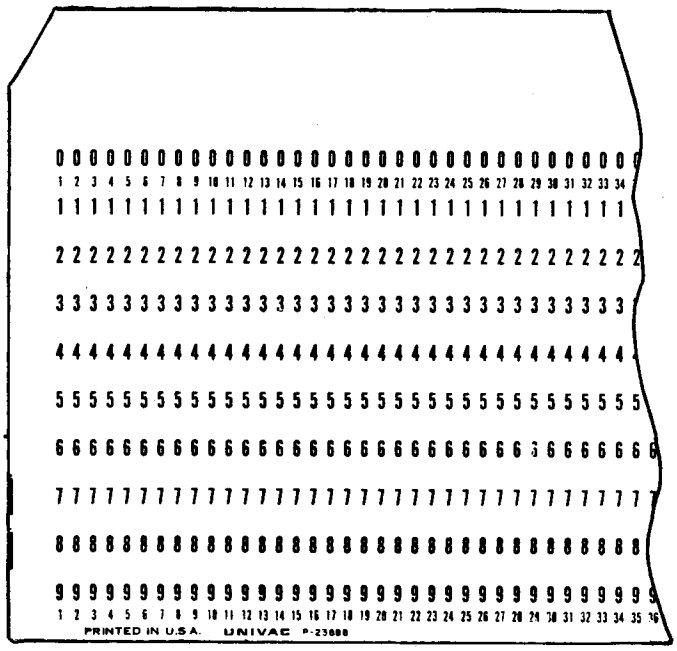
Show a "1" in column 1

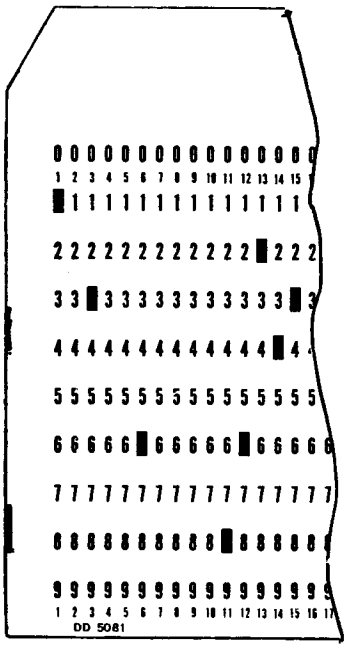
Show a "3" in column 3

Show a "6" in column 6

Show the number "86243" in columns 11 through 15.

(Actual size of partial card)





EXPRESS STOP 6

The purpose of this frame is to test for previous knowledge so that you may skip material which you already know.

The 80-column card shown below contains alphabetic punching.

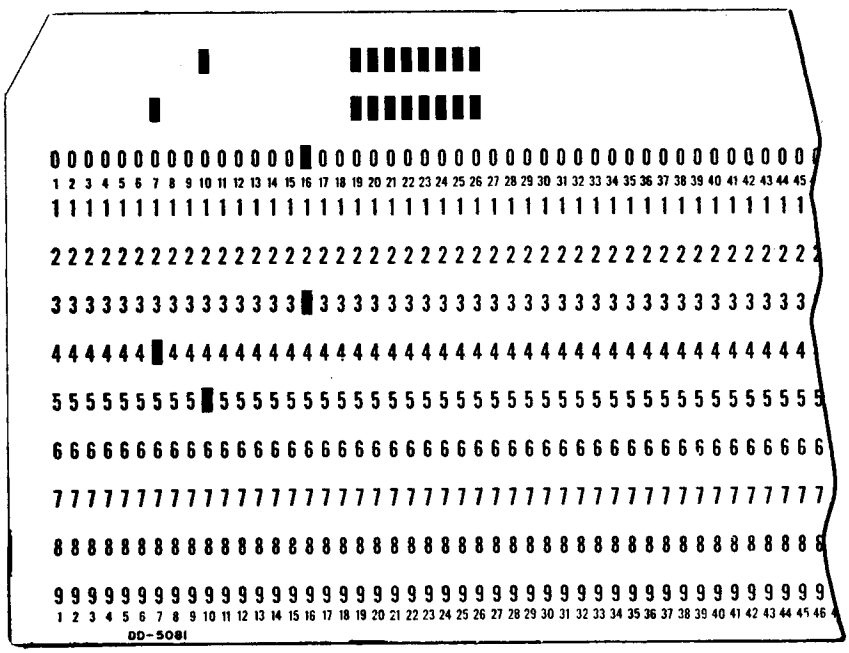
Find and label the Y (12) row and the X (11) row.

In which column is an "M" recorded? _____

In which column is an "E" recorded? _____

In which column is a "T" recorded? _____

If you made any mistakes, continue with next frame.



Column 7

Column 10

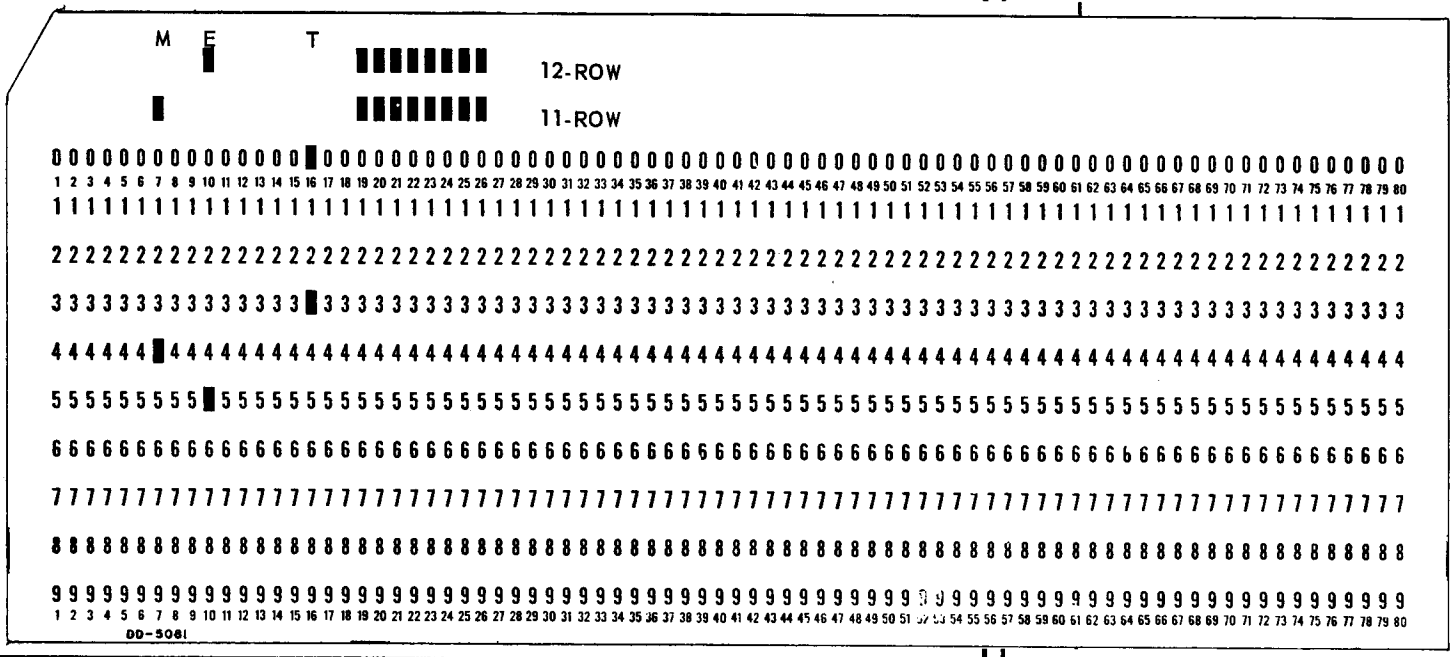
Column 16

If you made any mistakes, continue with next frame.

If you answered correctly, skip to frame 29 on page 24.

ANSWER ON NEXT PAGE

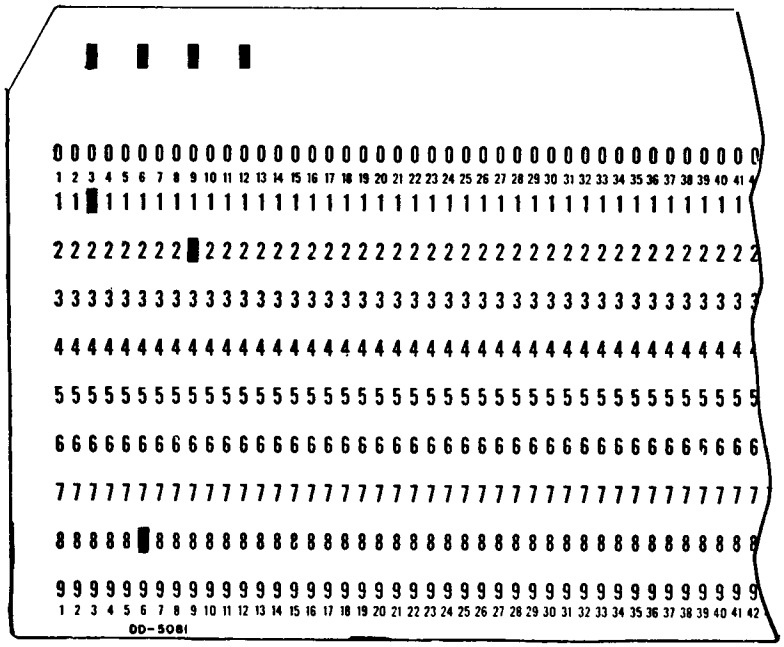
Answer to Express Stop 6

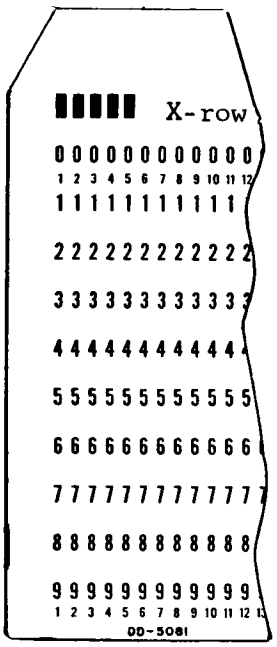


18.

The standard 80-column alphabetic code uses a combination of two punches in a column to represent an alphabetic character. One punch in the "Y", "X" or the "Ø" position, and the other in the 1 - 9 positions of the column.

The card below contains "Y" punches in columns 3, 6, 9 and 12. Indicate the row in which you would find an "X" punch. (Actual size of partial card.)

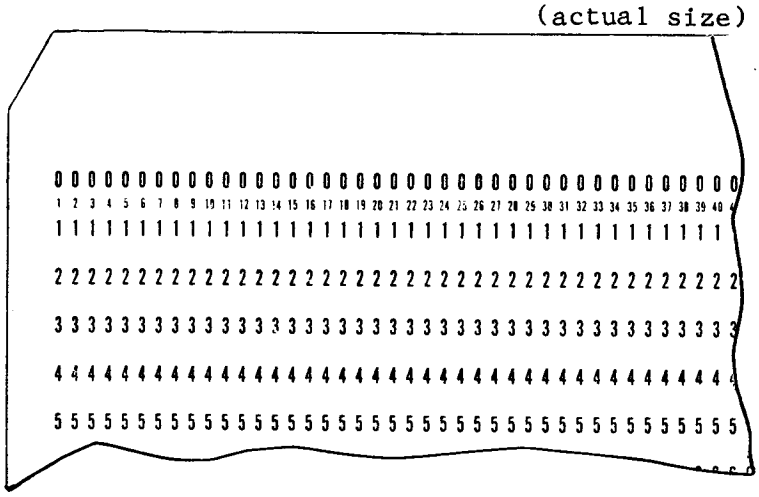


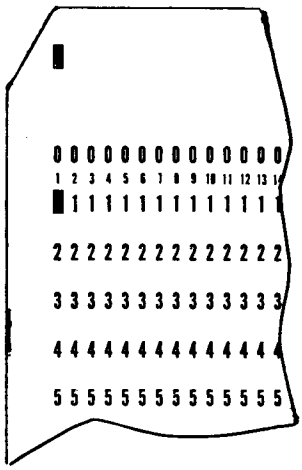


18 Cont'd

The "Y" (zone) or "12" position is used with a 1 position to represent the character "A". On the blank card below mark the two positions which would be punched to put an "A" in column 1.

(actual size)

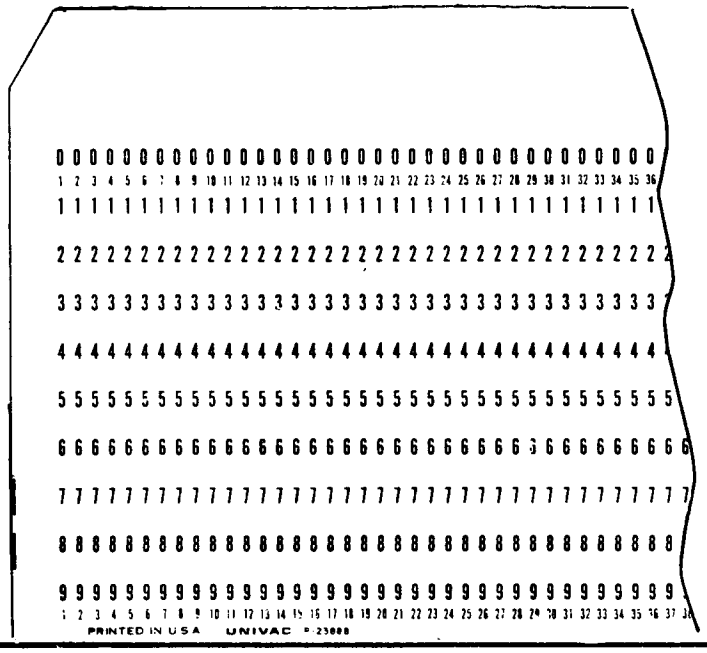


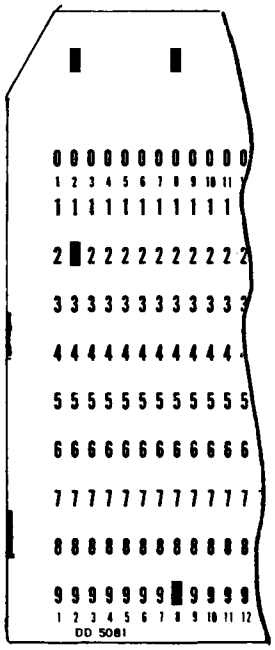


19.

The "Y" punch plus the "2" punch represents the character "B". On the blank card below mark the two positions which would be punched to put a "B" in column 2.

Therefore, using the "Y" or "12" position with the 1 through 9 position, the alphabetic characters "A" through "I" can be represented. On the blank card show the punches for an "I" in column 8.





20.

The table below shows the punch combinations which represent the alpha characters.

Example: Y plus 1 = A

12 or Y plus	A 1	B 2	C 3	D 4	E 5	F 6	G 7	H 8	I 9
11 or X plus	J 1	K 2	L 3	M 4	N 5	O 6	P 7	Q 8	R 9
0 plus		S 2	T 3	U 4	V 5	W 6	X 7	Y 8	Z 9

NOTE: The 1 punch is not used here.

What is the punch combination for E, L and Y?

The character "E" is represented by a "Y" punch and a "5" punch in the same column.

The character "L" is represented by an "X" punch and a "3" punch in the same column.

The character "Y" is represented by an "0" punch and an "8" punch in the same column.

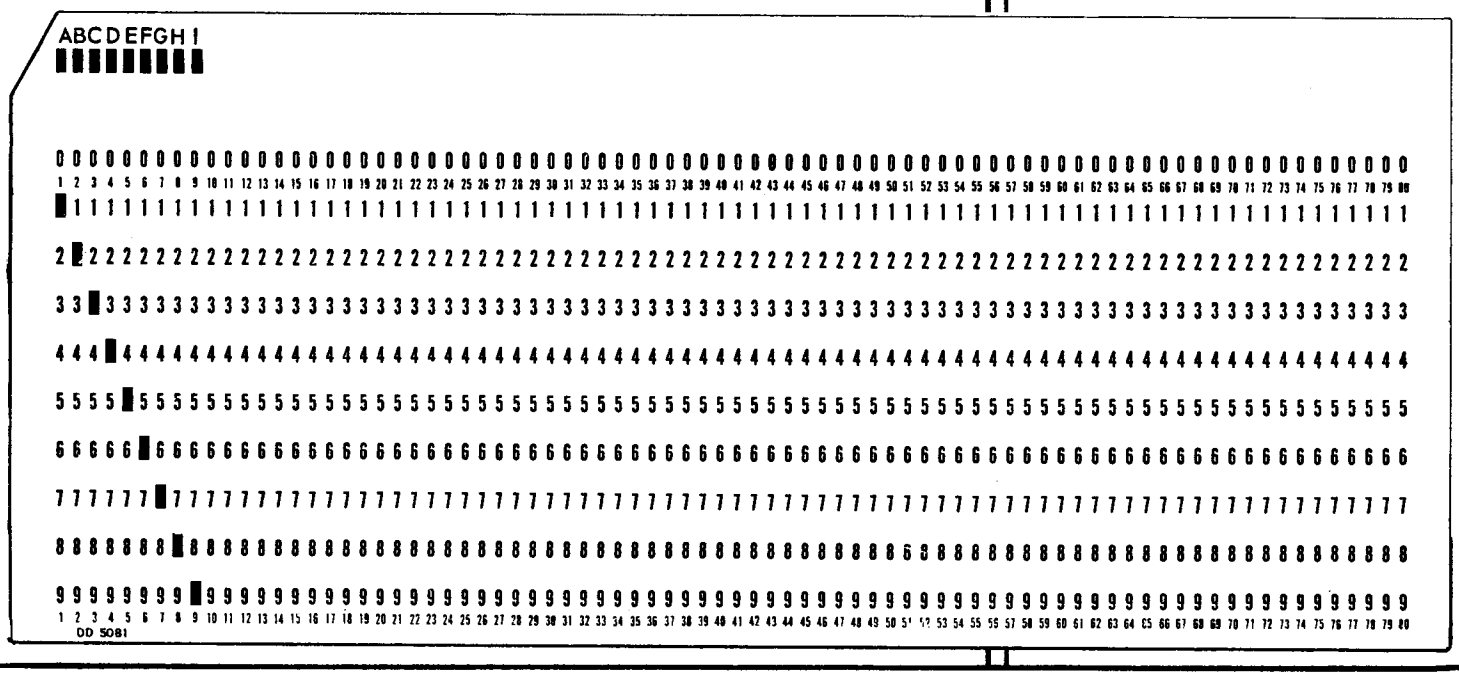
21.

Below is a card showing the punch combinations for the letters ___ through ___.

A through I

D is in column ____. Column 4

G is in column ____. Column 7

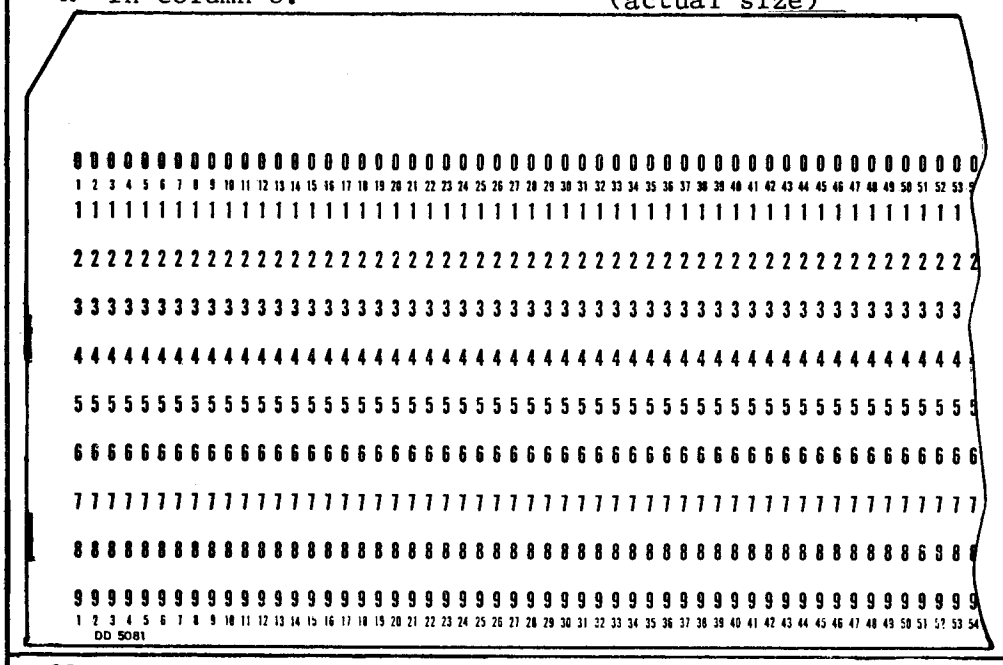


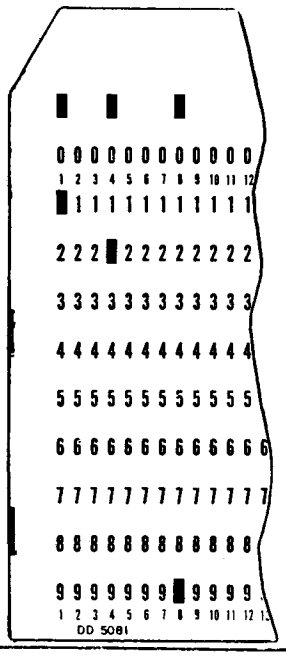
22.

The 80-column alphabetic code is always found in the basic three groups of combinations.

The alpha characters from "J" through "R" use the "X" zone, or "11" position, with a 1 through 9 position. "J" would be represented by the "X" or "11" position, and the "1" position. Indicate the punching for a "J" in column 1.

Indicate the punching for a "K" in column 4 and an "R" in column 8. (actual size)

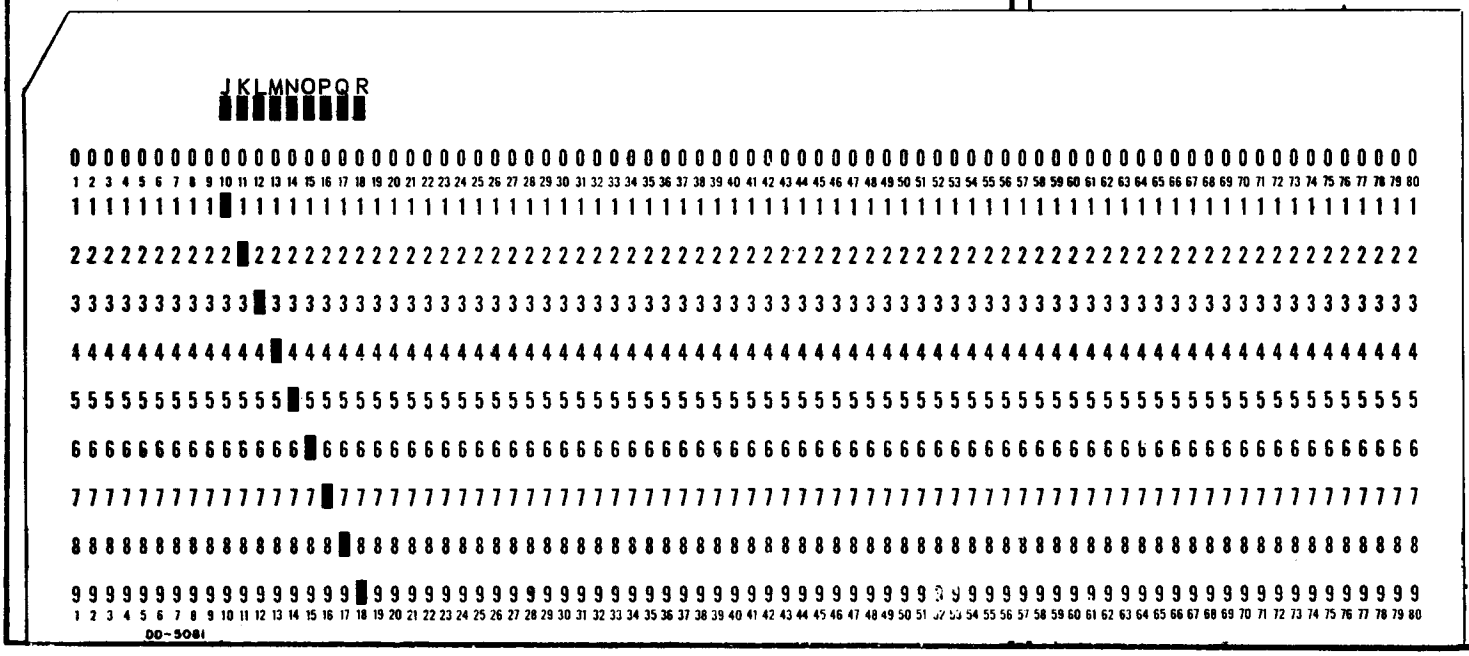




23.

Below is a card showing the punch combination for the letters ___ through ___.

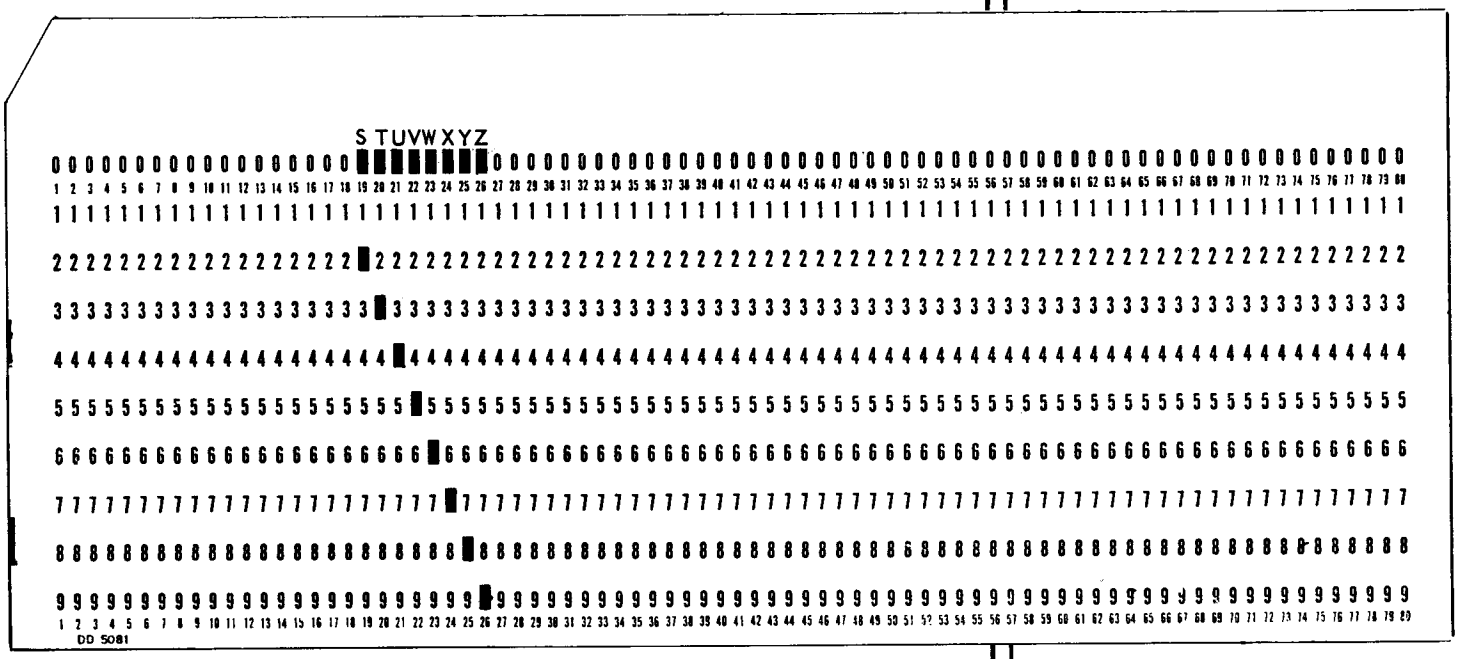
J through R



24.

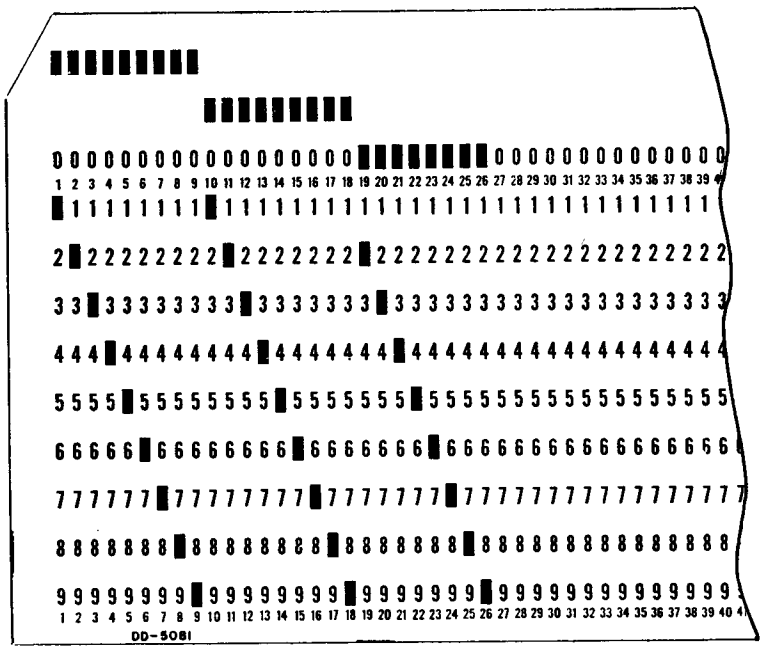
Below is a card showing the punches for the letters ___ through ___.

S through Z



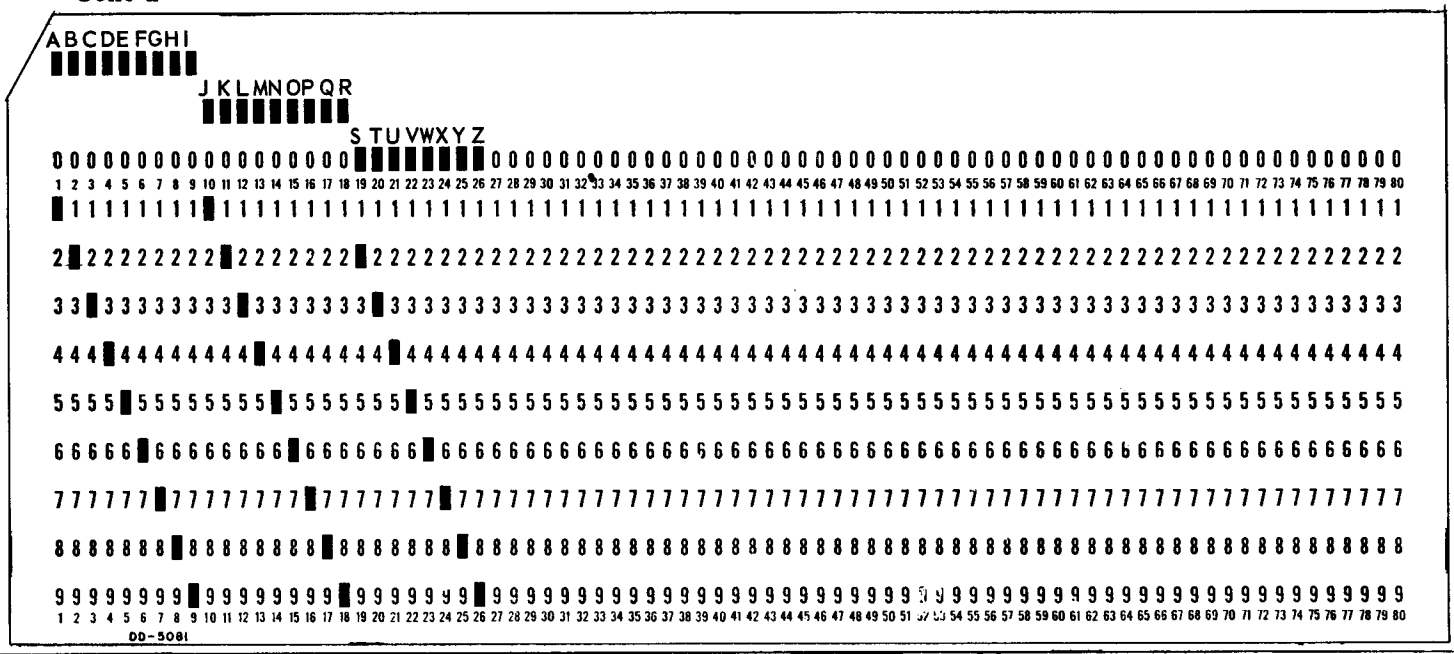
25.

Write a letter on each column to show what its punches represent.



ANSWER ON NEXT PAGE.

25 **Cont'd**



26.

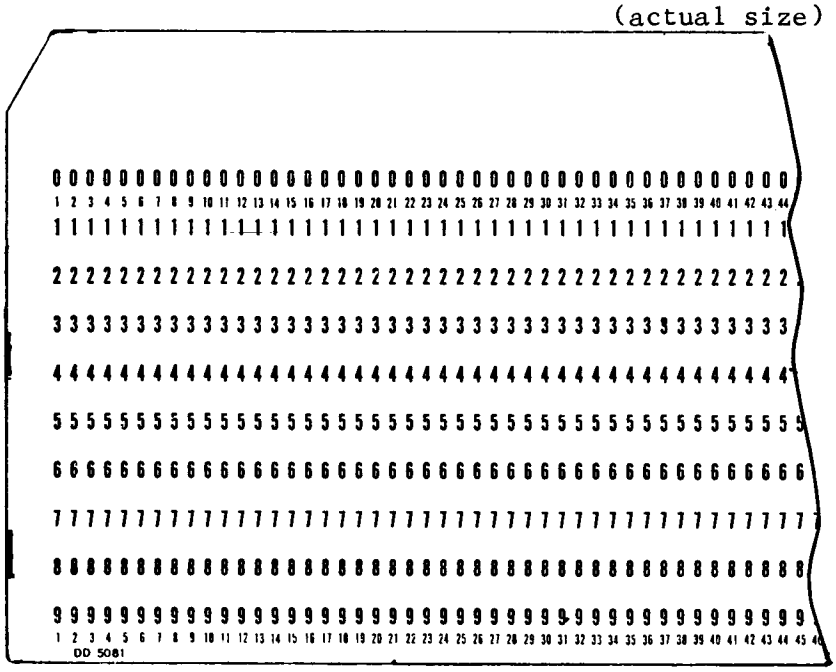
The alpha characters "S" through "Z" use the "0-position" with the "2-position" through "9-position".

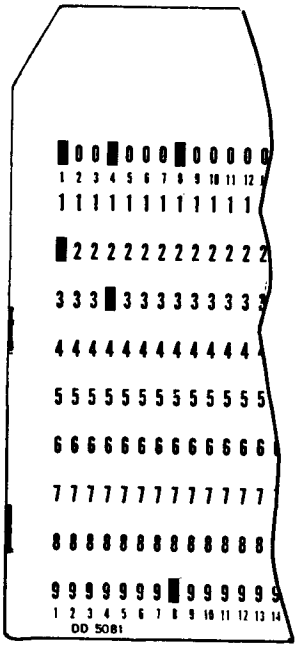
Indicate the punching for an "S" in column 1.

Indicate the punching for a "T" in column 4.

Indicate the punching for a "Z" in column 8.

(actual size)





27.

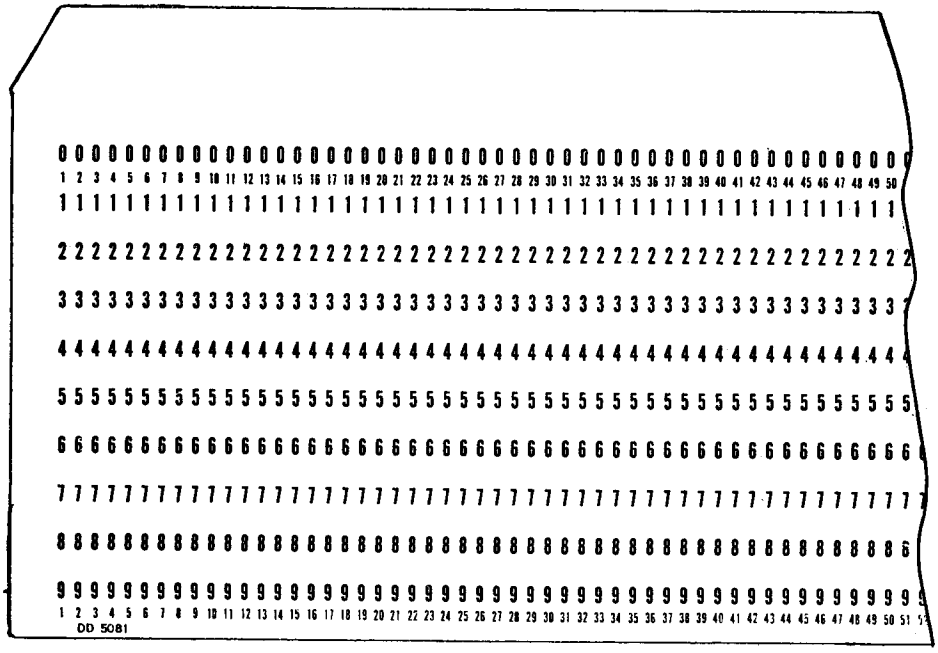
Here is a list of the 65 standard punch combinations representing each character of the alphabet, 10 numeric symbols and the special characters, for the 1701 or 1710 with the 9000 series Keyboard.

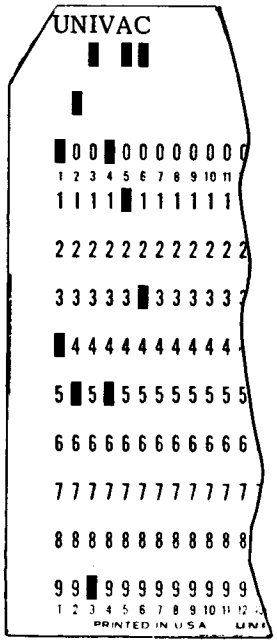
VP & VIP 9000 CODE CHART

SYMBOLS AND CHARACTERS	80-COLUMN CARD CODE	SYMBOLS AND CHARACTERS	80-COLUMN CARD CODE
A	12-1	8	8
B	12-2	9	9
C	12-3	0	0
D	12-4	#	3-8
E	12-5	!	0-3-8
F	12-6	$	11-3-8
G	12-7	.	12-3-8
H	12-8	-11	11
I	12-9	+	12-6-8
J	11-1	-	0-5-8
K	11-2	)	11-5-8
L	11-3	¢	12-2-8
M	11-4	0-2-8	0-2-8
N	11-5	'	12-7-8
O	11-6	&-12	12
P	11-7	12-0	12-0
Q	11-8	>	0-6-8
R	11-9	:	2-8
S	0-2	;	11-6-8
T	0-3	¬	11-7-8
U	0-4	,	5-8
V	0-5	11-0	11-0
W	0-6	?	0-7-8
X	0-7	''	7-8
Y	0-8	=	6-8
Z	0-9	!	11-2-8
1	1	(	12-5-8
2	2	@	4-8
3	3	%	0-4-8
4	4	*	11-4-8
5	5	∠	12-4-8
6	6	/	0-1
7	7		

27 Cont'd

From the chart above indicate the punching necessary to place the word "UNIVAC" in columns 1 through 6.



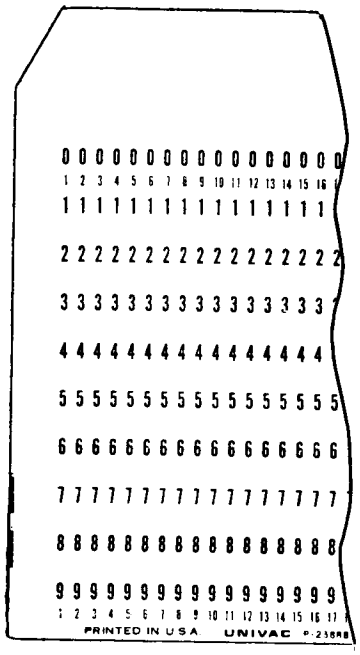


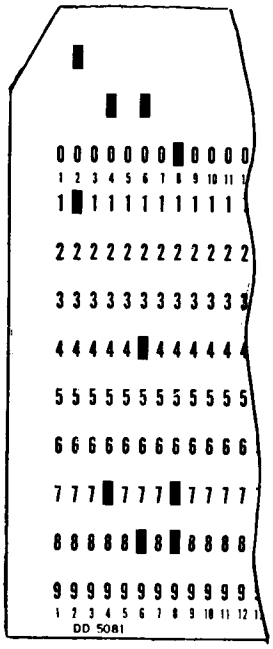
28.

On the card segment show the punching necessary to represent:

1. "A" in column 2
2. "P" in column 4
3. "*" in column 6
4. "?" in column 8

(See chart of characters in previous frame.)





29. UNIVAC offers two unique Key Punches. A very important feature is that every machine is both a Key Punch and a Key Verifier. The basic machine is called the VP, and its number is 1701. V stands for Verifier, and P stands for _____.	Punch
30. The second model of the machine is called the VIP, and its number is 1710. V stands for _____. I stands for Interpreter. P stands for _____.	Verifier Punch
31. The major functions of the VP are Verifying, Interpreting and Punching. ☐ true ☐ false	False, Verifying and Punching
32. What is the number of the VP? ☐ 1701 ☐ 1710	1701

33. What is the number of the VIP? _____	1710
34. There are three basic ways to use the VIP. They are: 1. _____ 2. _____ 3. _____	Verifying Interpreting Punching
35. There are two basic ways to use the VP. It is a: 1. _____ 2. Verifier	1. Punch
36. Punching can be done in Automatic (AUTO) or MANUAL Mode. AUTO Mode is when Punching is controlled completely or partially by a program. The other Mode is _____.	MANUAL
37. What is the name of the Mode when a program is used?	Automatic (AUTO)

38.

In addition to the two Modes mentioned in the preceding frame, there are two other Modes in which your machine operates: they are LOAD PROG Mode and LOAD DATA Mode. Complete the list of Modes.

1. _____
2. _____
3. LOAD PROG
4. LOAD DATA

1. AUTO
2. MANUAL

39.

These four Modes are determined by the operator by setting:

☐ a. Mode switches ☐ b. Automatic switches

a. Mode switches

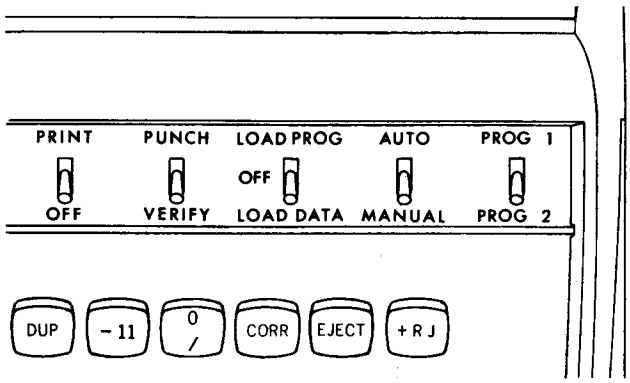
What are the four Modes:

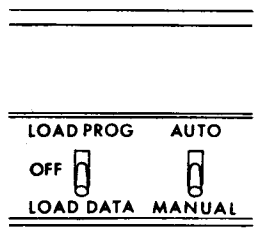
1. _____
2. _____
3. _____
4. _____

1. AUTO
2. MANUAL
3. LOAD PROG
4. LOAD DATA

40.

On the diagram below circle the Mode switches.





41.

What are the four Modes of the VP and VIP?

1. _____
2. _____
3. _____
4. _____

1. LOAD PROG
2. LOAD DATA
3. AUTO
4. MANUAL

42.

Data punched in a card generally consists of groups of characters; for example, a name is a group of alpha _____.

An identification number is a group of characters.

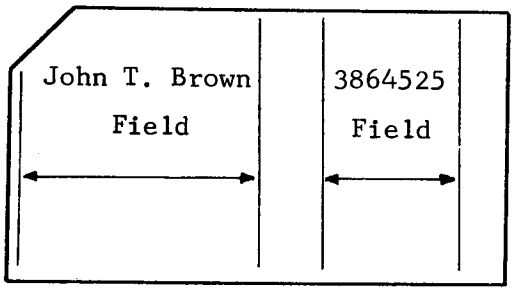
☐ alpha
☐ numeric

characters.

numeric

43.

The groups of data on the card below are called _____.



fields.

44.

What is a field?

_____
_____
_____

A field is a unit of data punched in the card in one or more adjacent columns.

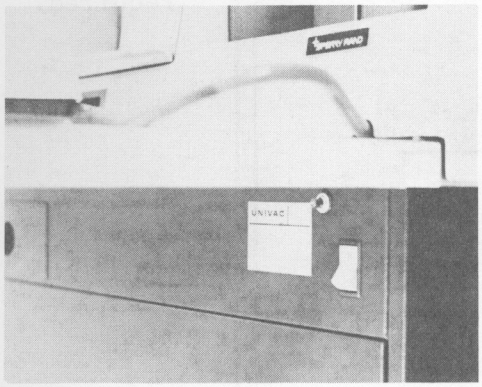
45. The most unique feature of this machine is its Core Memory or Storage. Core S_____ is a unit into which a code can be written electronically and retained until needed later. Like many computers, the VP and VIP have S_____.	Storage Storage
46. If we want to remember something, we have to rely upon the ability of our brains to store the information until it is needed. Similarly, it is necessary to store I_____ in the form of data inside the Key Punch. The data is retained or stored in Memory until is is punched into the card. The area where information is held is known as M_____ or S_____.	information Memory Storage
47. Key Punches and Verifiers of older design use a program card that is wrapped around a program drum as a type of Storage device. However, these were less flexible in use than an electronic _____ Storage. The VP and VIP, being of modern design, use electronic Core _____.	Core Storage

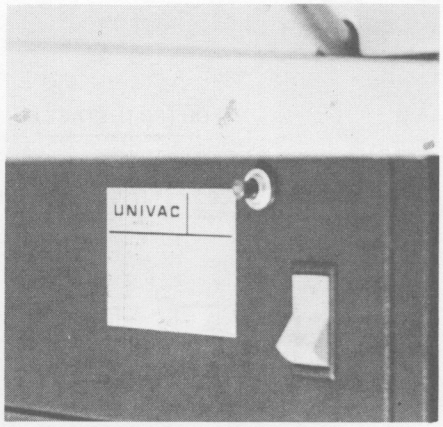
48. Each storage column in the 1701 or 1710 can hold one character, just as each card column can hold one _____. How many columns on a punch card equal one storage column in the VP or VIP?	character 1 column
49. Core storage is used to store: 1. the programs- which govern skipping of card columns, duplicating of card columns, and other functions. 2. the data- which the operator keys in, or is read from a card. Give two types of stored information. 1._____ 2._____	1. program 2. data
50. No actual Punching takes place until the entire card is "set up", that is, when all the desired data is keyed into Storage, and the operator is sure that it is correct. This allows the operator to Backspace and _____ an error without remaking a card.	correct
51. When is Punching done?	Only after the entire card is "set up".

52. What advantage can you see to storing the key strokes until the whole card is ready, rather than Punching a column after each key stroke?	It allows you to Back-space and correct an error, which you sensed as you made it, without repunching the card.
53. The arrangement of electronic storage makes it unnecessary for the operator to wait for the machine to catch up. While the VP or VIP is Punching the stored information, the operator can begin keying_____.	data for the next card
54. What are the main advantages of having core storage in a key punch?	1. Errors can be corrected without repunching. 2. speed 3. program storage

55.

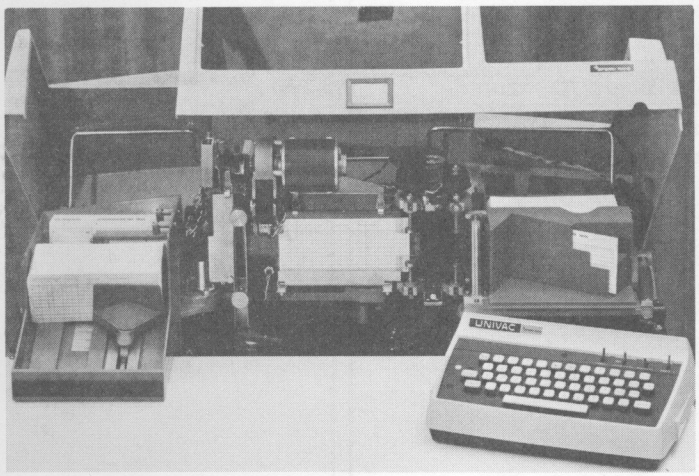
The first switch an operator must use is the power ON-OFF switch. Circle it on the picture below. If you have a machine find the ON-OFF switch and turn the machine on and then off.

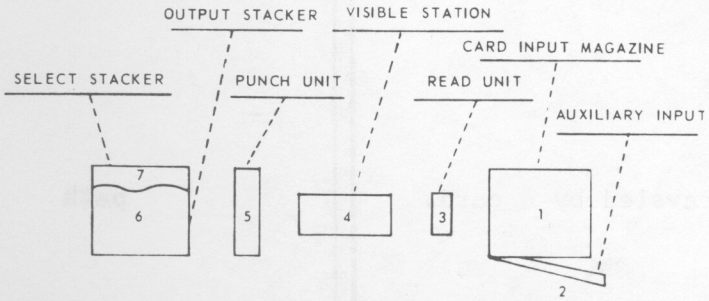




56.

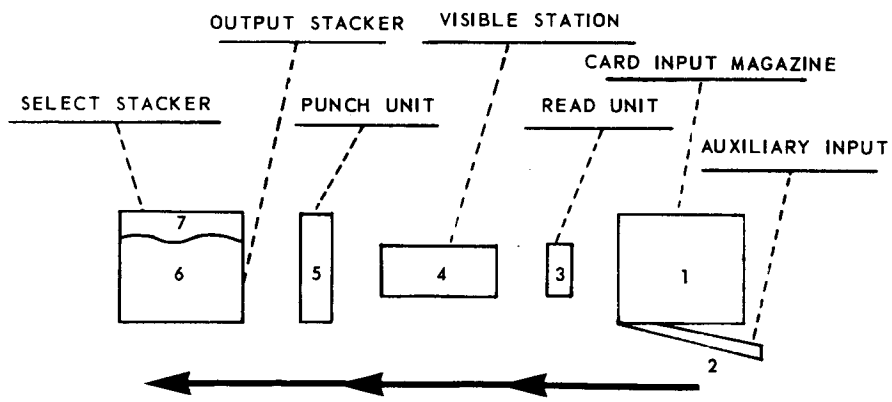
Below is a picture showing the card path of your Verifying Punch, and below the picture is a diagram emphasizing the main features of the card path.





57.

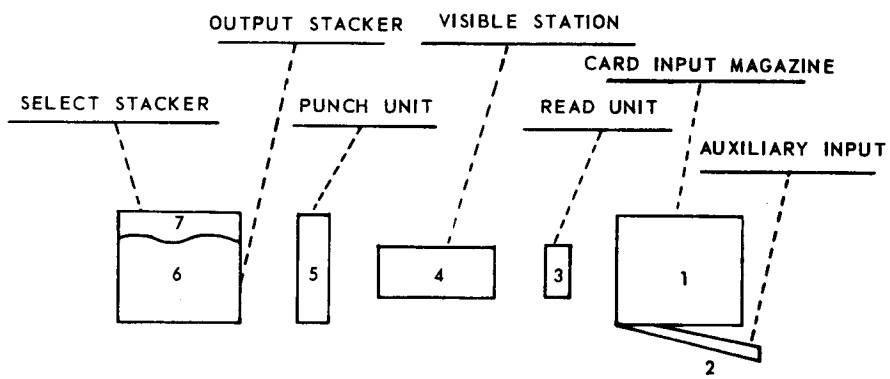
Carefully look over diagram below which illustrates the path followed by a card. Reference will be made to this diagram on succeeding frames.



Written response is not required.

58.

Write the name of each unit on the line above it.



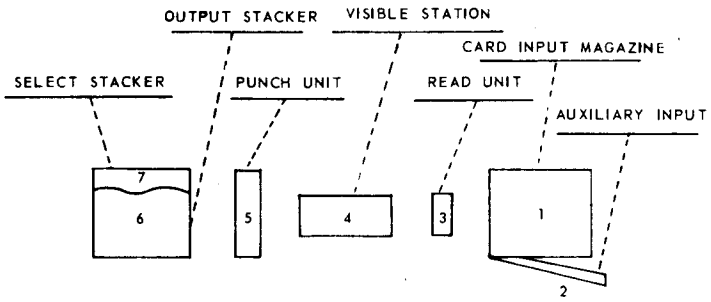
1. Card Input Magazine
2. Auxiliary Input
3. Read Unit
4. Visible Station
5. Punch Unit
6. Output Stacker
7. Select Stacker

The diagram shows the _____ traveled by a card.

path

59.

The number of cards which can be put into the Magazine is approximately 600. Label the Card Input Magazine in the diagram. Write its capacity.



1 Input Magazine
600 cards

60.

To load cards, hold them in your right hand and with the left hand, push the card Follower Block. The handle for the Follower Block sticks up from the Card Magazine. Put the cards in and release the

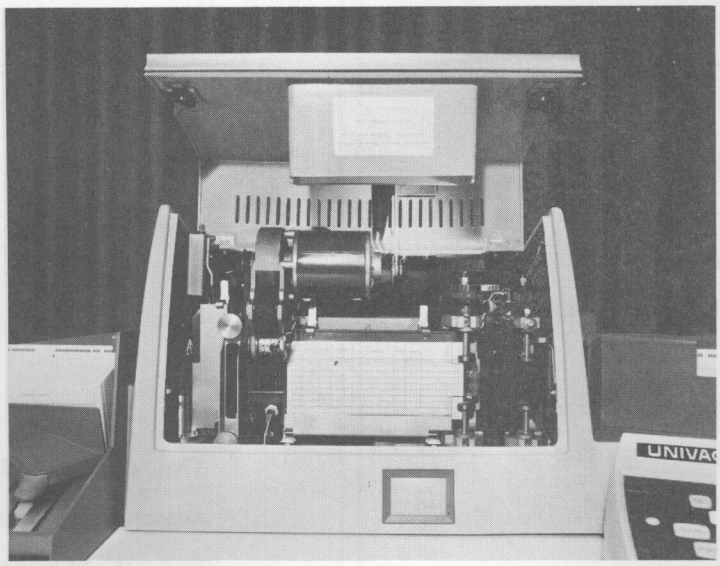
_____ _____.

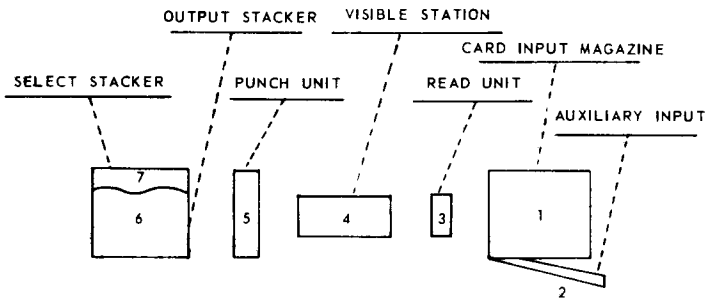
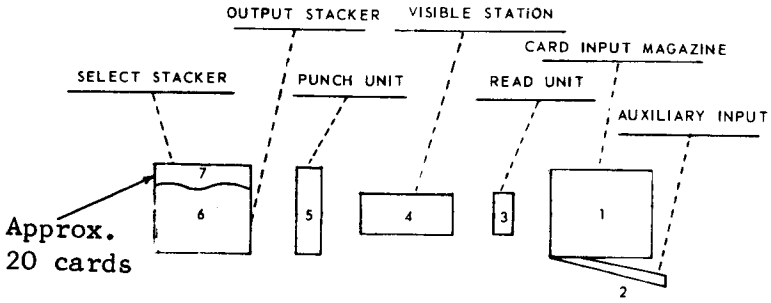
Follower Block

61.

If you have a machine available load the Card Magazine with some cards.
Cards are placed in either input area with the printed side toward the operator and the 9-edge at the bottom.
If the Visible Station is empty when you hit FEED, the Keyboard will interlock and the red light will come on. To clear this condition depress CLEAR. Try this on your machine.
(To clear the Visible Station, hit EJECT.)
After you have loaded the Visible Station, hit FEED several more times. What happens?

The cards will advance to the Output Stacker.

62. In order for the Auxiliary Input to Feed a card, there must also be cards in the Input Magazine. Insert a card into the Auxiliary Input and Feed it.	
63. The cards move through the machine in a right to left direction. What is the second unit in the card path? The Read Unit is used to read information from program cards and data cards.	Read Unit
64. The picture below shows the Verifying Punch with its access cover open. What can be seen within?  	The Visible Station, The Read Unit and the Punch Unit

65. What is the next station (4) in the card path? Why is it named as it is?  	the Visible Station When the card is in this station it can be seen with the cover closed.
66 What is the fifth component in the path? Cards moving through this unit are punched, 2 columns at a time.	Punch Unit
67. Position 6 in the path is the _____ _____ and finally, number 7 is the _____Stacker. The Output Stacker is for all acceptable data cards and holds the same number as the Input Magazine, which is _____.  What is the capacity of the Select Stacker?	Output Stacker Select Approximately 600 approx. 20 cards

68.

The Output Stacker has a maximum capacity of approximately 600 cards. After the Output Stacker has received approximately 600 cards, the Keyboard will stop operating. This is called an interlock. To clear this condition, you must empty the Stacker and return the Follower to its original position and depress CLEAR; the machine is now ready to continue in whatever job you were doing.

When the Output Stacker is full, the Keyboard will interlock and you cannot proceed until you _____ _____.

Empty the Stacker and hit the CLEAR key and return the Follower to its original position

How many cards does it take to fill the Output Stacker?

Approximately 600

69.

The _____ _____ is for cards which are in some way unusual. It will hold about 20 cards. Check the cards below which are unusual.

Select Stacker

_____ Error cards

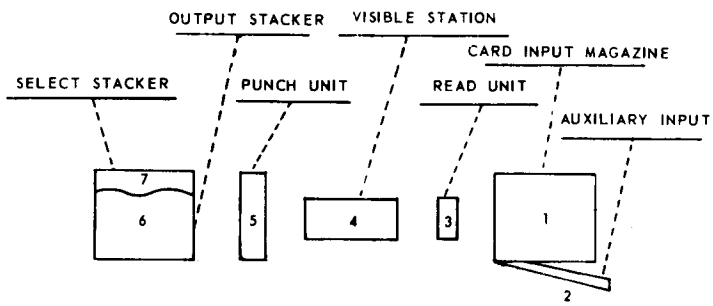
_____ Program cards

_____ Ejected cards

All three

70.

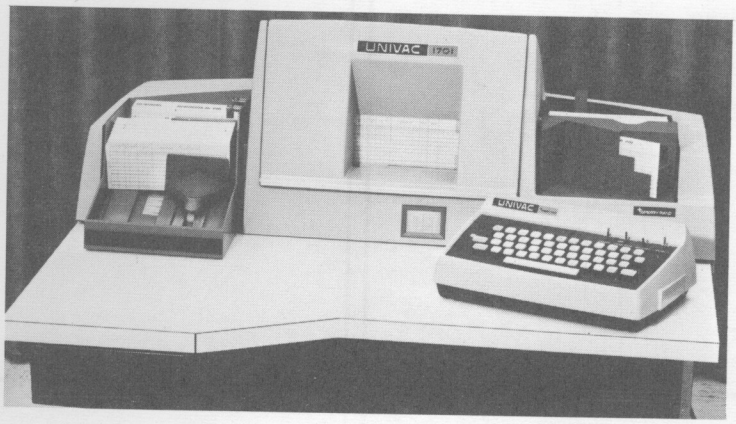
Label the numbered stations in the schematic drawing of the 1701 card path below.

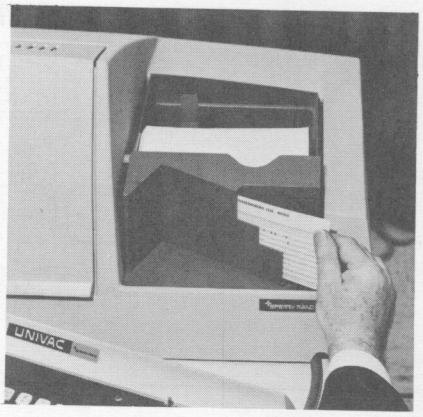


1. Input Magazine
2. Auxiliary Input
3. Read Unit
4. Visible Station
5. Punch Unit
6. Output Stacker
7. Select Stacker

71.

There is an additional feature of the card path which so far has not been discussed. It is an Auxiliary Input which will accept special cards one at a time. It is for the insertion of program cards, master data cards, blank cards. The Auxiliary Input is shown below, circle it.





72.

How many cards can be inserted into Auxiliary Input at once?

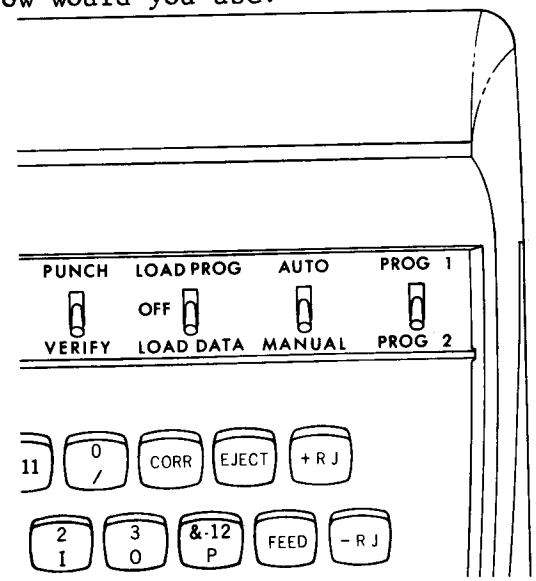
Only one

What is its purpose?

Insertion of special cards

73.

When loading a program or data card into the Auxiliary Input, which switch below would you use?



Load Switch

74.

What is the purpose of the Auxiliary Input device?
(Check only the ones that are correct.)

A☐ Enter a program card
B☐ Enter a data card
C☐ Insert a blank card
D☐ It has no purpose

A. Entry of a program card into program Storage
B. Entry of constant or semi-constant data into Data Storage
C. To insert a blank card into the Visible Station.

75.

1. How many cards at a time can be accepted by the Auxiliary Input feature? ☐1 ☐2 ☐3 ☐4

2. How must a card be placed into the Auxiliary Input feature?
   ☐ printed side toward the back and 12-edge down
   ☐ printed side toward the front and 9-edge down

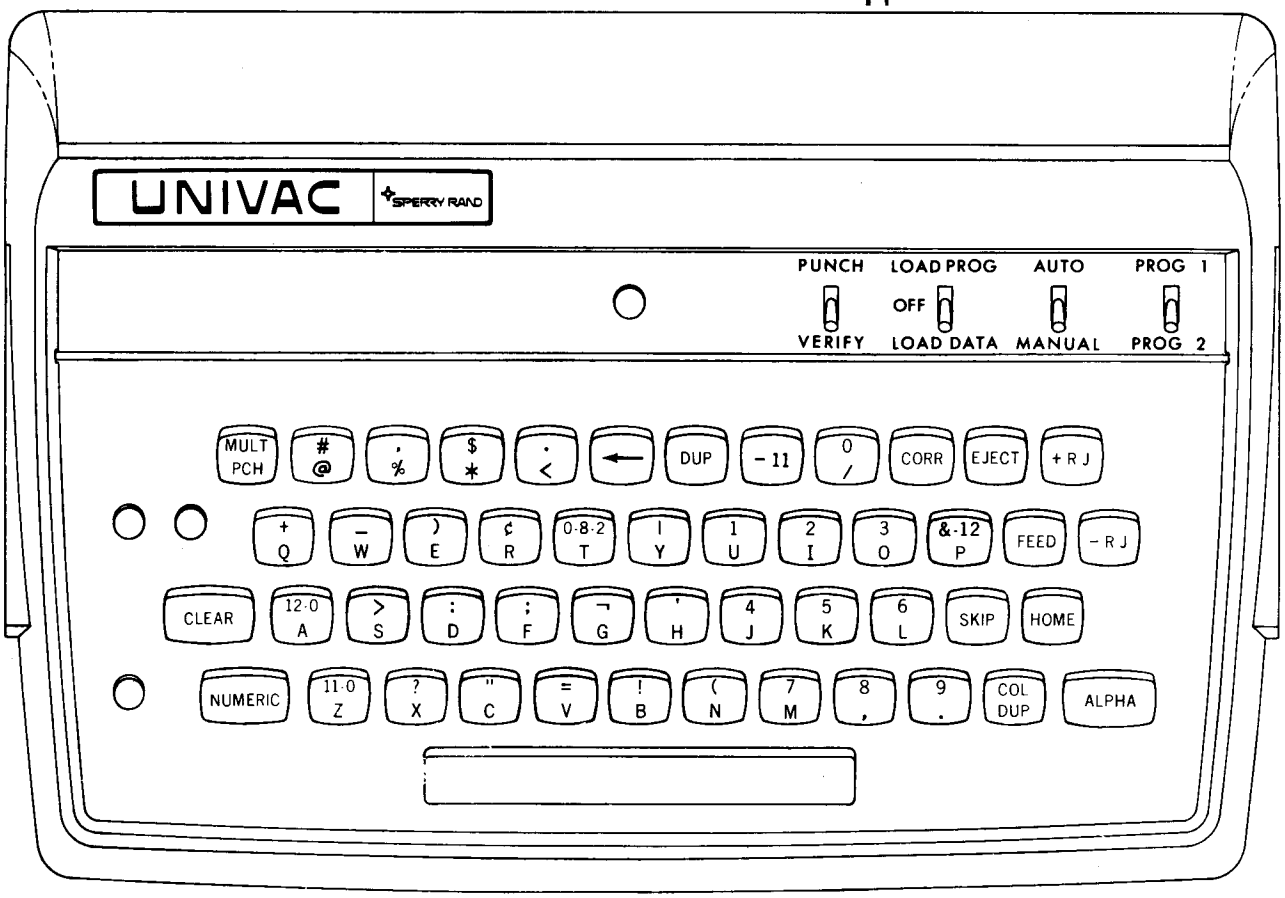
Only 1

With printed side to the front- 9 - edge down.

76.

During the remainder of this section of the course, you will learn the function of all the keys and switches, while operating your machine as a Key Punch.

Study the Keyboard for a few minutes.



77.

Now take out the Key Function Chart and compare it to the Keyboard diagram.

The Key Function Chart is in the operators booklet. What does it tell you?

The function of each key

78. The Key Function Chart tells you the _____ of each _____ on the Keyboard.	function key
79. What does the name Multiple Punch key suggest about its function? Find the Multiple Punch key on the Keyboard diagram. How is it labeled? Where is the Multiple Punch key located on the Keyboard?	That it is used for allowing multiple punching in one column (or equiv.) MULT PCH Top row, first key on the left
80. The MULT PCH key is used to create a special punch pattern which is not created by any one standard character key. This key is frequently used in preparing program cards for the VP and VIP. You will read more about programming your machine in a later section. What is the general purpose of MULT PCH?	entry of special punch combinations
81. The purpose of the MULT PCH key is to allow two or more character key depressions in the same_____.	column

82. Whenever you wish to enter into storage any special character for which there is no character key, you must use the _____ _____. Is this key used the same in the AUTO and MANUAL Modes? _____ To use this key, you should always depress it before striking the _____ character key for the column being "set up." You should always hold the _____ _____ key depressed while keying in data that will compose _____ characters.	MULT PCH yes first MULT PCH special
83. If the Keyboard becomes interlocked while Key Punching, only one key will clear up this condition. This is the purpose of the: 1. ☐ MULT PCH key 2. ☐ CLEAR key 3. ☐ NUMERIC key Interlocks are caused by: 1. The Output Stacker becoming full. 2. Improper card motion in the card feed path (a card jam). 3. Depression of the FEED key when the Visible Station is empty. How are the majority of interlocks cleared up?	2. CLEAR key By correcting the condition causing the interlock, and depressing the CLEAR key

84. Keyboard interlocks can be caused by any of three conditions. 1. A full Output Stacker 2. Feeding when the Visible Station is empty 3. A card jam in the card path If an interlock was caused by condition 1, how would you clear it? Condition 2 may be cleared by hitting CLEAR and then _____again. NOTE: The CLEAR key does <u>not</u> clear Core Storage. What does it do?	By emptying the Stacker and hitting the CLEAR key FEED It clears Keyboard interlocks.
85. A card jam is the result of a card not moving properly through the card path. If a card becomes bent, torn, or in some other way damaged, or something blocks the card path, it may not properly pass through the various stations. If a jam occurs no cards can pass until the jam is cleared. What causes a card jam? (A later section will teach you how to clear jams.) Card jams are very infrequent in the 1701 and the 1710 because of an improved card transport design.	A damaged card or an obstruction in the card path.

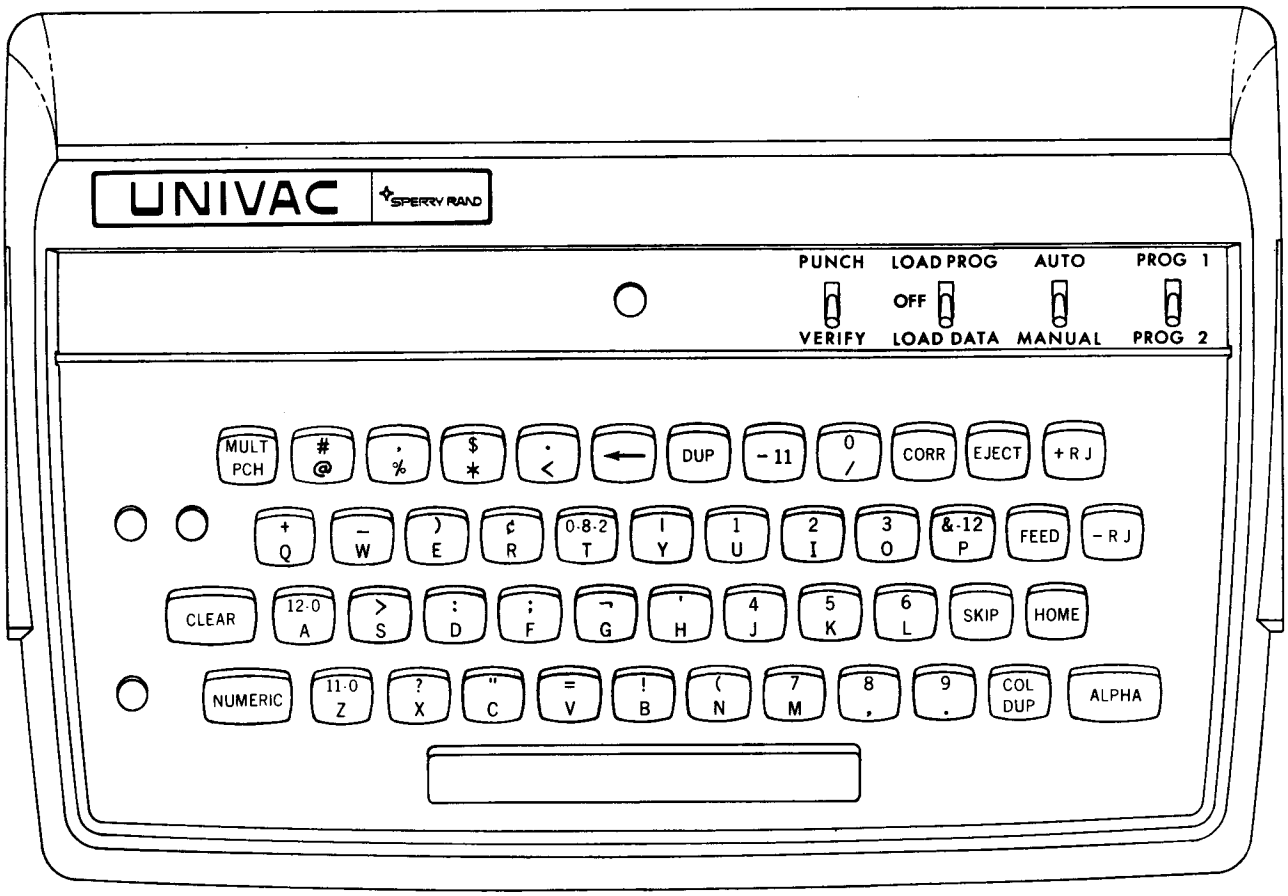
86.

As you know, typewriters have a key called a shift key which changes the type from lower case (small letters) to upper case (capitals). The VP and VIP have similar keys in the same Keyboard position. Find them on the Keyboard chart and write their names here:

1. _____
2. _____

NUMERIC

ALPHA



87.

The Keyboard is normally in the NUMERIC condition. When in NUMERIC, which set of figures on the keys are punched?

Top or numeric

How do you get the Key Punch to punch the lower set of characters?

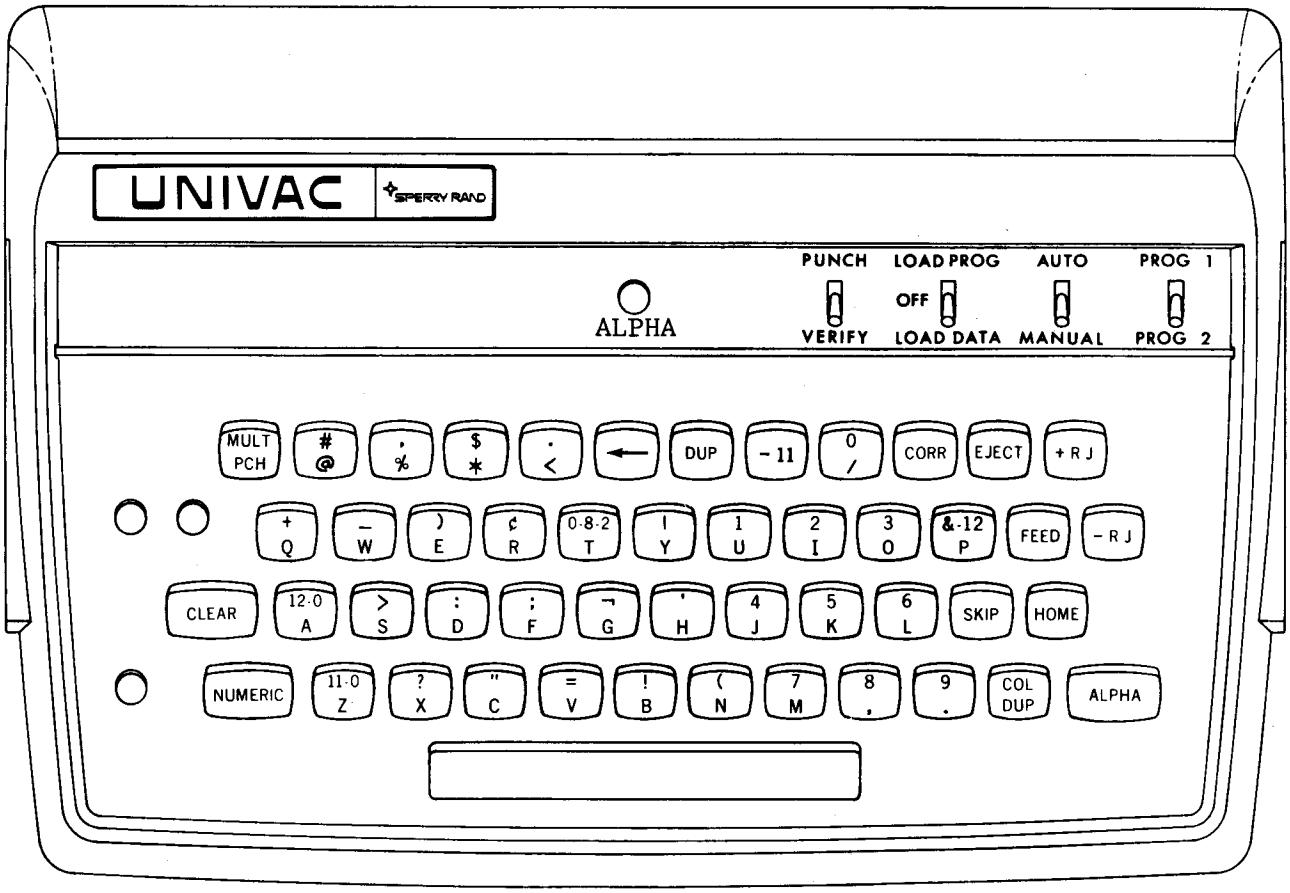
Push the ALPHA key.

88.

When the ALPHA condition is established, a green indicator light comes on.

Where is it on the Keyboard diagram?

Top center



89.

Unlike a typewriter, you do not have to hold or lock the shift key. When in the MANUAL Mode, it stays in NUMERIC until _____ then it stays in _____ until you _____.

you touch ALPHA

ALPHA touch NUMERIC

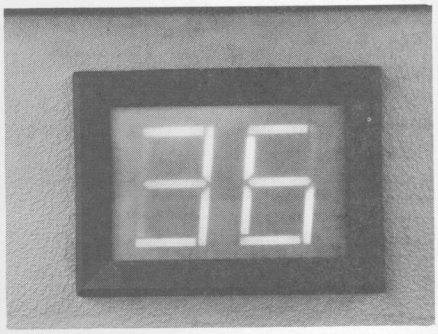
What color is the ALPHA Indicator Light?

The ALPHA Indicator Light is green.

90. The above describes the operation of the ALPHA and NUMERIC keys when the machine is in MANUAL Mode. When in AUTO Mode the shifting can be accomplished by program control. This will be described later. Describe the difference between the way ALPHA and NUMERIC operate in AUTO and MANUAL Modes.	In MANUAL, Shifting is accomplished by operator key depression. In AUTO, the program causes Shifting.
91. What is the function of the NUMERIC and ALPHA keys? Which indicator light do they affect? If you have a machine, set to MANUAL Mode and depress the ALPHA key, then NUMERIC.	They change the data that are being entered into Storage from ALPHA to NUMERIC and NUMERIC to ALPHA. The green indicator light goes on when in ALPHA Mode.
92. On the Key Function Chart find the Backspace key and write its function here.	It allows the Column Indicator to be moved back without changing the contents of Storage.

93.

On the picture below find the Column Indicator.



94.

What do you think is the function of the Column Indicator?

- ☐ It tells the operator which column she just keyed.
- ☐ It tells the operator which column will be set up (entered) by her next key depression.

If you have a machine, hit the Backspace and watch the Column Indicator. (If you are at column 1, it will go forward rather than backward.)

It tells the operator which column will be set up by her next key depression.

95. Depressing the Backspace Key (←) causes the Column Indicator to go back ☐ 0 Storage columns ☐ 1 Storage column ☐ 2 Storage columns without any effect on the contents of Storage.	1
96. Unlike other Key Punches, this machine can Backspace any time, in any position, and change data already entered because no Punching is done until the entire card is "set up" (entered into Storage). What unique feature of the VP and VIP makes this possible? Why can't this be done on other kinds of Punches?	Core Storage The holes are punched after each key stroke.

97.

NOTE: When you do not know how a key works, look on the Key Function Chart.

EXPRESS STOP 7

The next section was designed to teach beginners the function of each control key. If you are an experienced operator, you may skip to 146 on page 63.

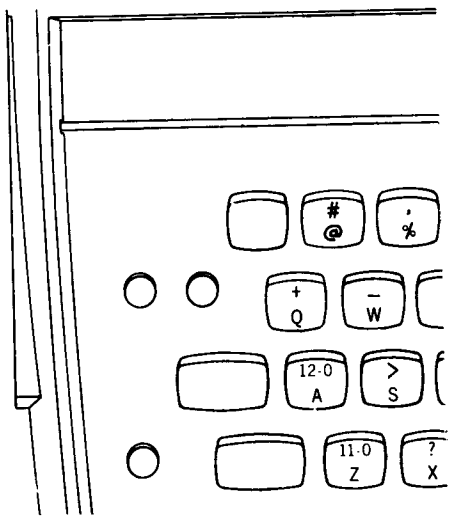
98.

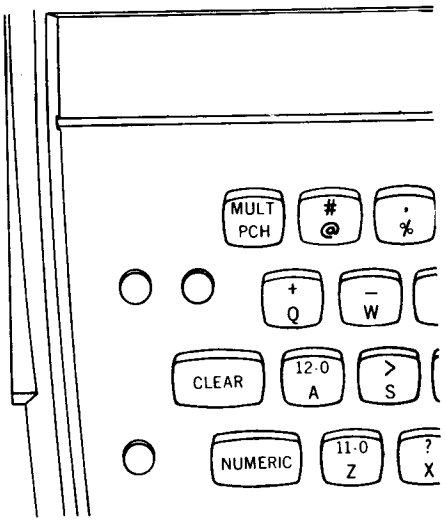
Find the Backspace key on the Keyboard Chart and describe its position. A Keyboard chart can be found in the operators booklet.

Top row, 6th key from left

99.

Label the blank keys below.





100.

Find the DUP key on the Keyboard Chart.

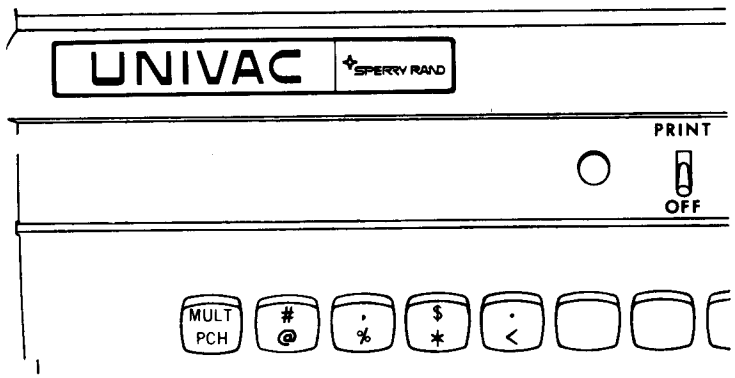
Where is it?

How is it labeled?

Top row, 7th from left

DUP

101. Refer to the Key Function Chart for AUTO Key Punching. What does the DUP key do?	It allows Duplication of information from the previous card by advancing the Column Index without erasing Storage. Duplication continues for as long as the field is defined.
102. Each card image is retained in Storage until something is written over it. Explain how this assists in duplicating data from one card to the next.	DUP passes over columns so that data previously entered are not changed and therefore may be used again to Punch the next card.
103. When Key Punching in the MANUAL Mode, without program control, the DUP key Duplicates one column for each key stroke. What happens when you hit DUP in MANUAL Mode without a program.	It Duplicates 1 column at a time.

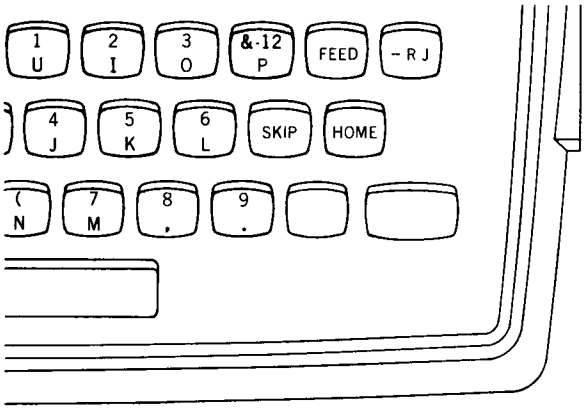
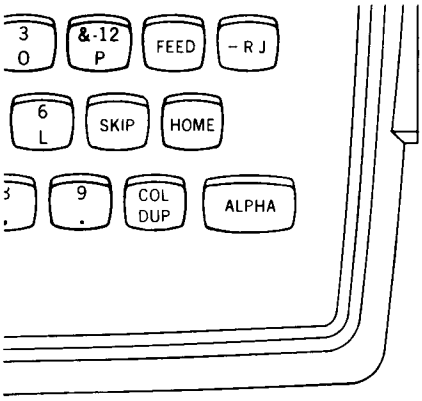
104. The key (DUP) can be used in either AUTO or MANUAL Mode. Depressing it when Key Punching causes the Column Indicator to advance to the first column of the next field, as determined by the program, without changing previous Storage contents. The _____key can be used in either____or_____Mode. What happens when this key is depressed during Punching with a field defined? Is previous data in Storage affected?	DUP, AUTO, MANUAL The Column Index advances to the first column of the next field. No.
105. Which key allows multiple column advancing without erasing when Punching? ☐ DUP ☐ + RJ ☐ SKIP Under what condition does the above happen?	DUP In AUTO Mode with appropriate program
106.  Label the blank keys (if necessary refer to the Keyboard Chart).	← DUP (Backspace)

107. THE SKIP KEY When there is no field defined by a program and the machine is set to AUTO, the SKIP key will cause Skipping and Clearing of one column. When set to MANUAL, the SKIP key causes Skipping to the end of the card, and Clearing of all skipped columns to blanks. This may be used when the operator wants to clear the machine of all data. To clear, hit SKIP twice in the _____ Mode. Why should the operator depress SKIP twice to clear Storage?	MANUAL The first depression Skips from whatever column you are on to the end of the card, and the second Skips through the entire card.
108. Later in this course you will learn to program the VP or VIP to Skip so that it will Skip to any point in the card that you desire. This can be done fully automatically or by depressing the _____ key.	SKIP
109. Whenever it is desired to advance through multiple Storage columns, the _____ key is normally used. When SKIP is depressed during the AUTO Key Punch Mode, it causes Skipping to the first _____ of the next field as determined by the _____ and Clears to blanks any data previously contained in that field of Core Storage. When is the SKIP key normally used? Depressing SKIP during the _____ Key Punch Mode causes Skipping to the _____ column of the _____ field and Clears to blanks any _____ previously contained in that field of Storage.	SKIP column Program Whenever it is desired to advance through multiple Storage columns and Clear Storage AUTO first next data

110 Your first depression of the SKIP key causes the Clearing of all columns, following your last key depression through column 80. If you hit SKIP a second time, the VP or VIP will Skip from column 1 through column 80, Clearing the entire data Storage. What is accomplished by your first SKIP depression?	You clear all data from where you are through column 80.
111. Clearing the Storage by hitting_____in_____ Mode will not affect program Storage. Like DUP, when there is no field defined by the program you will Skip only_____ column.	SKIP MANUAL 1
112. You should clear data Storage before starting each new job. How do you do this?	Set to MANUAL and hit SKIP twice.

113. 1. On the 1701 and 1710 which key is similar to the tab key on a typewriter? 2. Briefly explain what the operation of this key is during the AUTO Key Punch Mode? 3. What does this key do during the MANUAL Key Punch Mode?	1. SKIP 2. It causes Skipping to the next field, Clearing to blanks any data previously contained in the field. 3. It causes Skipping through column 80, Clearing all data to blanks.
114. When the SKIP key is depressed during the MANUAL Key Punch Mode, it causes Skipping through column____, Clearing all data to blanks. Why should you hit SKIP twice to clear data Storage?	80 The first depression Skips from wherever the Column Indicator is, to the end of the card, and the second Skips all the way through.

115. Describe the function of the SKIP key: 1. AUTO - with program 2. AUTO - without program 3. MANUAL	1. It causes Skipping to the first column of the next programmed field, clearing any data previously contained in memory to blanks. 2. It will Skip 1 space only. 3. It causes Skipping through column 80, clearing all data to blanks.
116. Find the HOME Key on the Keyboard chart. Where is it?	Second row from bottom, first key on right
117. What is this similiar to on a typewriter? If you have a machine, try this key.	Carriage return
118. Which key allows the return to column 1 without card Feeding?	The HOME key

119. What do you think the HOME key does? (You may use the Key Function Chart if you have to.)	Causes the Column Indicator to return to column 1 without changing Core Storage.
120. Where is the Column Duplicate (COL DUP) key located?	Bottom row, second from right
121. Label the blank keys  	

122.

The COL DUP key is similar to the DUP key, but not identical. COL DUP advances 1 column at a time, but continues to advance as long as you hold the key down. COL DUP behaves this way in either AUTO or MANUAL Mode.

What is the difference between COL DUP and DUP?

COL DUP
Advances without changing Core, 1 column at a time, continuing as long as key is held. It is the same in both Modes.
DUP
AUTO: Advances to the beginning of the next field.
MANUAL: With program, advances to the beginning of the next field.
AUTO or MANUAL: Without program, duplicates one column per key depression.

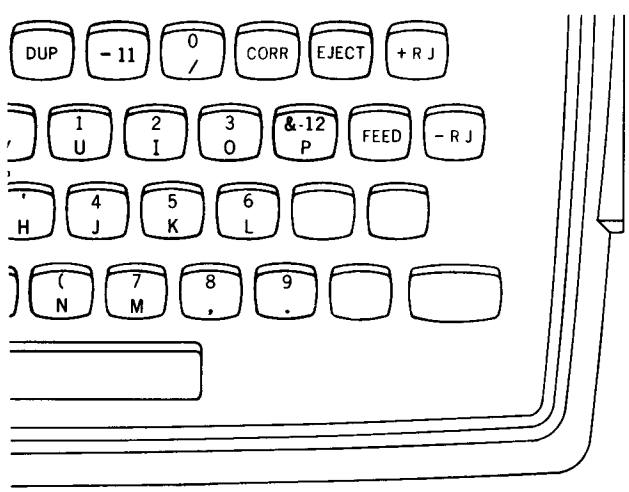
123.

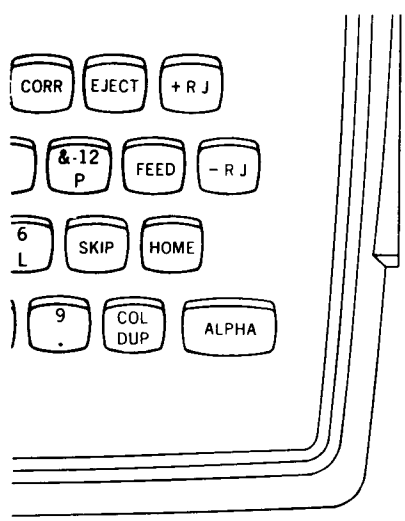
What is the function of the COL DUP key?

It allows Duplication column by column without erasing.

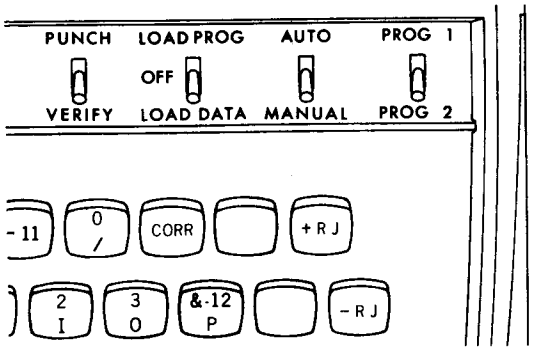
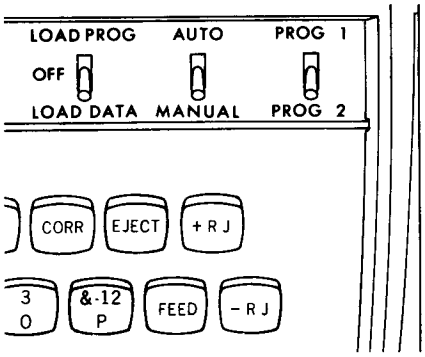
124.

Label the blank keys.





125. Find the EJECT key on the Keyboard Chart. Where is it located? If you have a machine, try it.	Top row, second from right
126. Is the following statement about the EJECT key true or false? (Refer to the Key Function Chart) Cards are ejected from the Visible Station without Punching or changing Storage, and a new card is fed to the Visible Station.	False No card is fed to the Visible Station.
127. Depressing EJECT causes the card in the _____ Station to be transported to the Select Stacker. The Column Indicator returns to column number 1. No _____ takes place, and Storage_____ _____. When do you use the EJECT key? Punching (☐ does, ☐ does not) take place. What happens to Storage?	Visible Punching is not changed When you wish to release a card to the Select Stacker and return the Column Indicator to 1 and not Feed a new card. Does not It is not affected.

128. After pressing EJECT, what will be in the Visible Station?	It will be empty.
129. Label the blank keys  	
130. What happens when you hit EJECT?	The card in the Visible Station is ejected; no card is Fed. The Column Indicator is set to 1. Storage is not changed. No Punching takes place.
131. There is a Space Bar on the VP and VIP in the same location as on a typewriter. What do you think it does?	Causes the Column Indicator to move 1 column and clear the corresponding Storage column to blank.

132. Where is the Space Bar located?	At the bottom of the Keyboard
133. What happens when you strike the Space Bar during the Key Punch Mode? What happens to the Column Indicator?	One Storage column is cleared to a blank It advances by 1 column
134. What is the difference between the functions of the SKIP key and the Space Bar during Key Punching?	SPACE BAR It causes the clearing of 1 storage column to a blank and advancing of the Column Indicator by 1 column. SKIP AUTO: Causes Skipping to first column of next programmed field, clearing any data previously contained in memory to blanks. (Without a programmed field it will Skip and clear 1 space only. MANUAL: Causes Skipping through column 80 clearing all data to blanks.

135.

Find the FEED key on the Keyboard Chart.

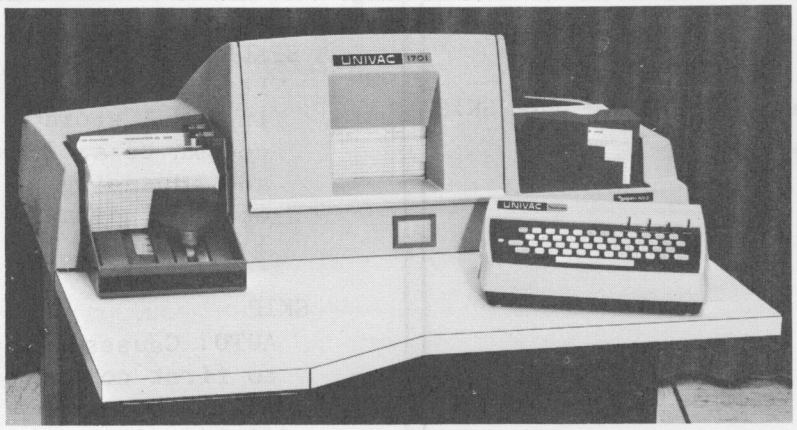
Where is it?

Second row from top, second key from right

136.

Depression of the FEED key causes each card in the card path to advance 1 position. The picture shows cards in 3 positions, they are:

1. _____
2. _____
3. _____



1. Input
2. Visible Station
3. Output

137.

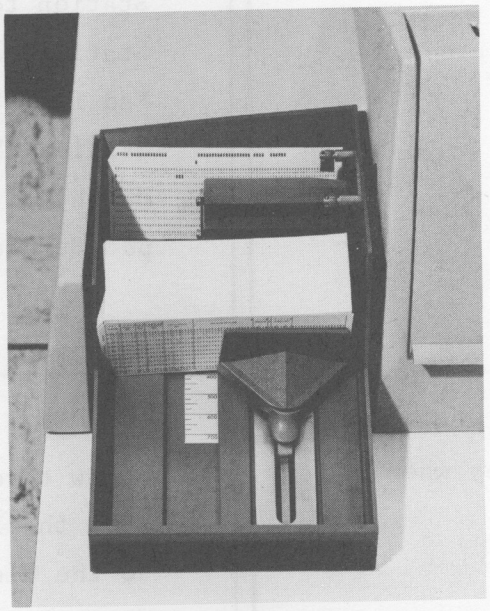
As a card moves from the Visible Station to the Output in the diagram above, the contents of Core Storage are _____ into the card.

punched

138. What happens when you depress FEED when there is a card in the Visible Station with the Mode switches set to PUNCH and OFF?	As a card is Fed from the Input Hopper through the Read Station to the Visible Station, a card is Fed from the Visible Station through the Punch Unit to the Output Stacker.
139. Describe the result of touching the FEED key when there is no card in the Visible Station.	A new card is Fed from the Input Hopper to the Visible Station, the Column Indicator is set to 1, and the red Keyboard Interlock light comes on.
140. The card capacity of the Output Stacker is approximately 600 cards; the capacity of the _____ Output Stacker is about 20 cards.	Select

141.

Notice on the picture there are____sections of the stacker area. The one in front is called the Output Stacker, and the one in the back is called the Select



2

Output Stacker

142.

The ☐ SKIP ☐ DUP ☐ FEED key causes the card in the Visible Station to be transported to the _____ Stacker or the _____ Stacker.

FEED

Output

Select

The Column Index always returns to column number ___. Simultaneously, a new card is fed from the _____ Hopper to the _____ Station.

1

Input Visible

FEED causes the card at the _____ _____ to be punched as it passes through the Punch Unit.

Visible Station

143. If column 1 of a card is programmed for a Skip or Duplicate, what will appear on the Column Indicator? ☐ A. Column 1 ☐ B. The number of the first column of the next field	B. The number of the first column of the next field
144. When in AUTO Key Punch Mode, card Feeding and_____ are automatically initiated when data are keyed into column 80 or when column 80 is automatically passed.	Punching
145 Check the things that happen when FEED is depressed. ☐ 1. Each card in the card path moves forward one position. ☐ 2. The card at the Visible Station is Punched as it moves through the Punch Unit. ☐ 3. The Column Indicator returns to 1. ☐ 4. When the Visible Station contains a card, the red Interlock Light comes on.	1, 2 and 3 are correct.

146

NOTE: Remember, when you do not know how a key works, look on the Key Function Chart.

147. Right justifying is the term given to the process of lining something up on the_____hand side. The columns of data below are right justified: 016427 2776 26 38114 25435 1101 001 588723 To the columns above add: 876 and 10060052, so right justification is maintained.	right 016247 2776 26 38114 25435 1001 001 588723 876 10060052
148. Right justifying is particularly important in numeric data because_____ _____. hint: $128 $12	the position of a digit indicates its value
149 In the hint above, the "12" in each amount means something quite different. How could you write the two figures so that they would be less likely to confuse someone? $128 ___ $12 ___	$128 $ 12 Right justify them.
150 What is the name given to the operation you just performed?	Right Justification

151.

Your new Key Punch will automatically R_____ J_____for you when programmed to do so.

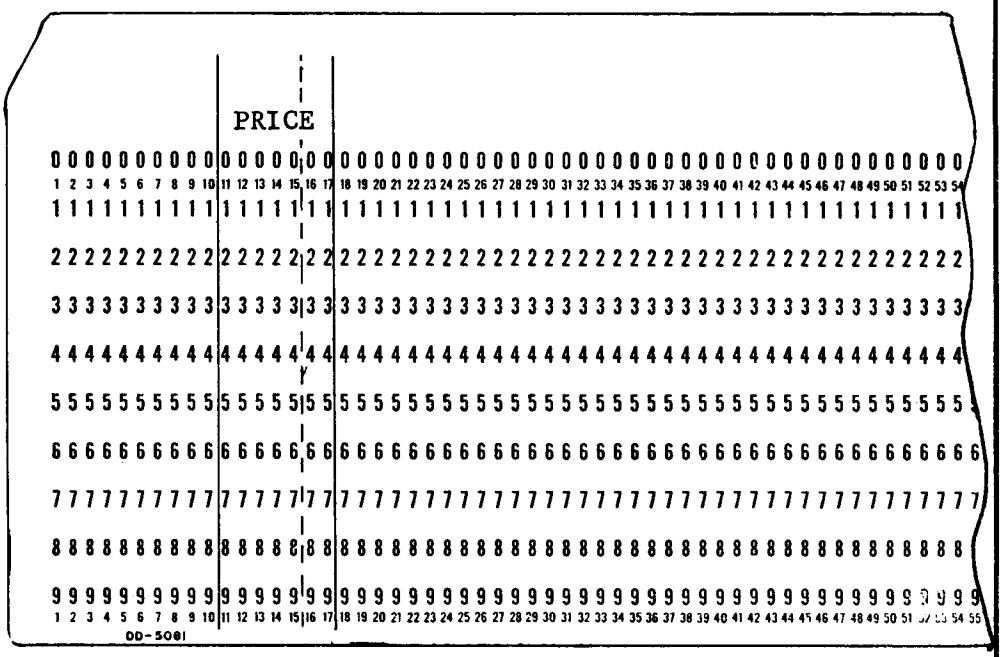
Right
Justify

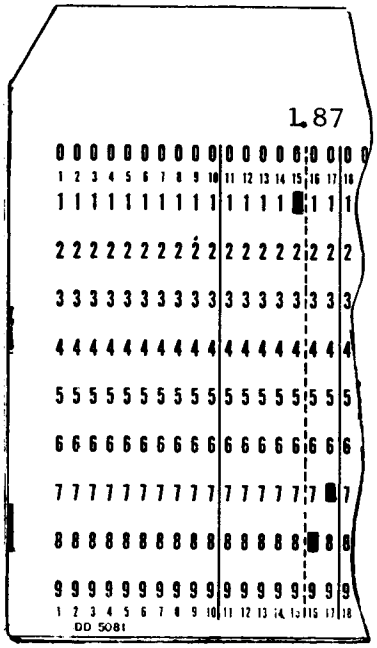
In an earlier section of this text, you learned what a field is. Define a field.

A field is a group of related columns, for example, a name field or a price field.

152.

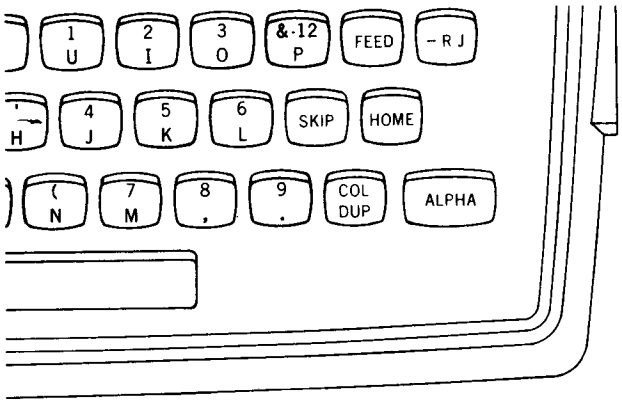
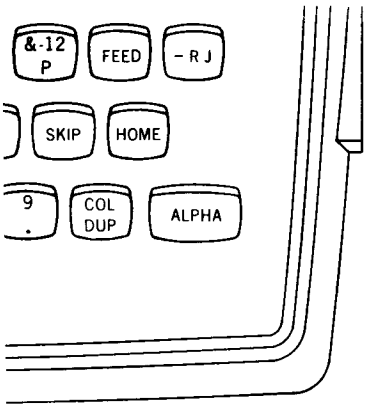
On the card below, there is a 7 column field set aside for the entry of a price. The dotted line represents the decimal point. Show how the number $1.87 will look when Right Justified in this field. Write the numbers in the proper columns.





153. To Right Justify, the operator starts keying the numbers when the first column of the field is reached. In the previous example, what column number would be on the Column Indicator before the first key depression?	11
At column 11 you would begin keying in 187, then hit +RJ. Describe the result of these key depressions.	187 will be punched in columns 15, 16, and 17.
154. An important feature of this machine is that it will Right Justify any field, anywhere in the card, regardless of length. Find the Right Justify keys on the Keyboard Chart. How many are there?	2
When Right Justification takes place, the machine automatically fills the first part of the field with zeros.	

155. How are the two keys labeled? Find +RJ on the Key Function Chart. Write its function here.	+RJ -RJ It moves data to the right end of the field and fills the left with leading zeros.
156. What does Right Justification mean?	To line up on the right side
157. Describe what happens when the +RJ key is depressed.	Data are automatically moved to the right end of the field. Columns to the left of the first significant digit are filled with zeros.
158. The -RJ key works the same as _____key except that it stores an 11-punch above the last digit in the _____, indicating that the value of that field is negative.	+RJ field

159. Describe what happens when you touch -RJ.	Right Justification is accomplished and an 11-punch is stored to indicate that the field is negative.
160. Label the blank keys  	
161. It is a very easy matter to reproduce or remake a card on the VP or VIP. Insert the card into the _____Magazine or the _____Input, set the LOAD switch to_____ _____and depress _____.	Input Auxiliary LOAD DATA FEED
162. When you hit FEED, what happens?	The card is fed, read, its image is stored and the card is out-filed into the Select Stacker.

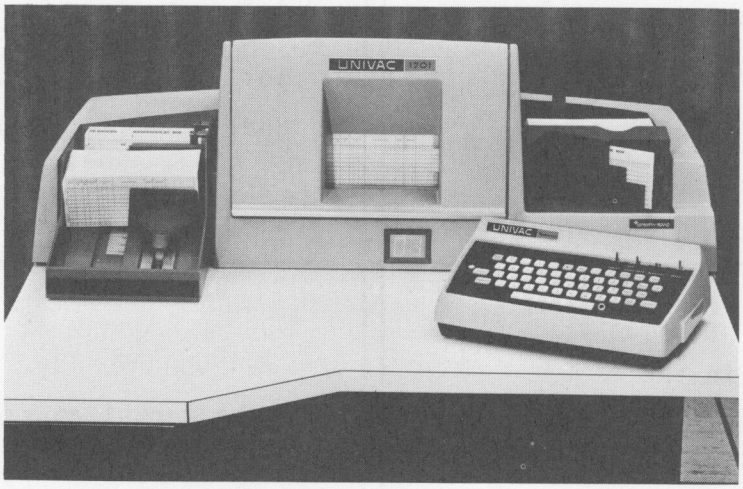
163. You must now reset the LOAD switch to _____. If you were to Feed a blank card before resetting the LOAD switch, what would happen?	OFF Blanks would be put in each column of Storage. In effect, you would have erased the previous card.
164. After you have placed the card to be made in Storage, how can you reproduce it? How many copies can you now make?	Hit FEED As many as you want
165. A procedure that many Key Punch operators use which is not necessary or acceptable on the VP or the VIP, is to code both 0 and 1 for Duplication of an Alpha field. It is unnecessary to include the ___ for Alpha. 0 will cause Duplication of either A _____ or N _____ fields.	1 Alpha Numeric
166. If you include both the ___ and ___ for an Alpha Duplication, the Automatic Duplication will not work. You should Punch only ___ in the first column of a Duplicate field.	0 and 1 0

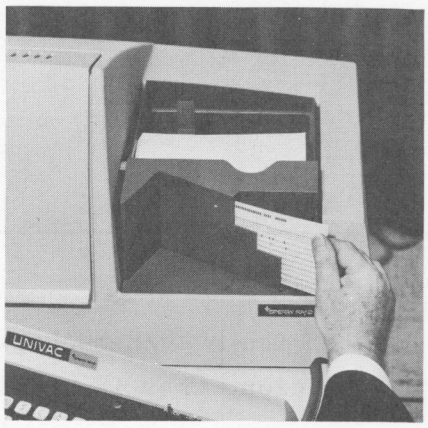
167. A program is a sequence of carefully planned steps written in a code which the VP or VIP can read and follow. For example, you can write an instruction which will cause the Key Punch to automatically Skip from one place in the card to another. Define a program.	A sequence of steps which the machine can follow
168. When programmed to do so, as the operator reaches the end of a Manually keyed field, the machine will automatically Skip to the _____ of the next Manual field. The p_____has to tell the Punch where to begin Skipping and where to _____ _____.	beginning program stop Skipping
169. The operator can instruct or_____her machine by Punching a code into a card and then inserting the card in the Auxiliary Input. When she hits FEED, the card is Fed and Read. The contents of the card are Stored and the program card is Fed to the _____Stacker.	program Select

170.

The program card can then be saved for future use.

On the picture below, find the Auxiliary Input.





171.

The AUTO/MANUAL switch is used to select whether machine operation is in Automatic Mode (AUTO position) or in Manual Mode (MANUAL position). Setting the Switch in the MANUAL position provides for the manual control of Skipping and Duplicating from the Keyboard.

The AUTO/MANUAL switch is used to select either the _____ or the _____ Mode.

AUTO MANUAL

172. What is the function of the AUTO/MANUAL switch?	It selects whether Key Punching, Verifying or Interpreting is done in Automatic Mode (AUTO position) or in Manual Mode (MANUAL position).
173. When the AUTO/MANUAL switch is set in the MANUAL position, what is provided for?	The manual control of Skipping and Duplicating from the Keyboard
174. The Program 1/Program 2 (PROG 1/PROG 2) switch determines which program is in control when Punching or Verifying is being done. What is the function of the PROG 1/PROG 2 switch?	It determines which program is in control when Punching or Verifying.

175.

What does the LOAD switch do?

It sets the VP or VIP for the entry of a program or data from a prepunched card.

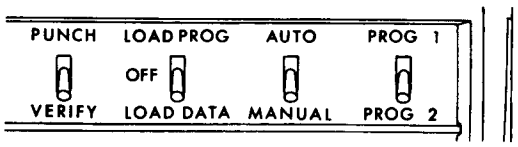
176.

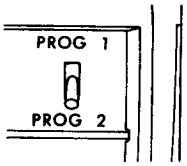
Which switch determines whether Program 1 or Program 2 will be in control? Circle it on the diagram below.

If you wanted to clear both programs from Storage you could set the LOAD switch to LOAD ☐ PROG ☐ DATA and feed a blank card through the _____ Input.

PROG

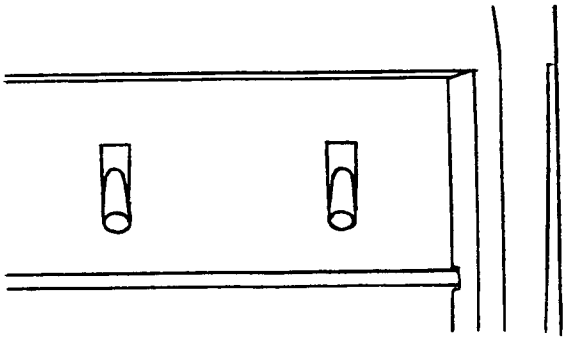
Auxiliary

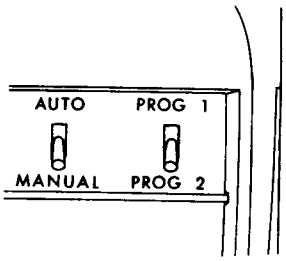




177.

Label the blank switches.





EXPRESS STOP 7

In some Key Punch installations the Key Punch operator never has to Punch her own program cards. If you do not Punch program cards, skip to 222. If you must make program cards, go on to EXPRESS STOP 8.

EXPRESS STOP 8

If you have been programming a Key Punch with a program drum, you will already know which function is indicated by a particular punch. What is the function of a:

12-punch _____

11-punch _____

0-punch _____

1-punch _____

4-punch _____

5-punch _____

6-punch _____

7-punch _____

12 is Field Definition
11 is Skip.
0 is Duplicate.
1 is Alpha Shift.
4 is Field Definition.
5 is Skip.
6 is Duplicate.
7 is Alpha Shift.

If you were able to identify these punches, skip to frame 195 on page 81.

178.

The operator can store two programs in Storage and use either one of them by_____.

changing the Program Select switch from 1 to 2.

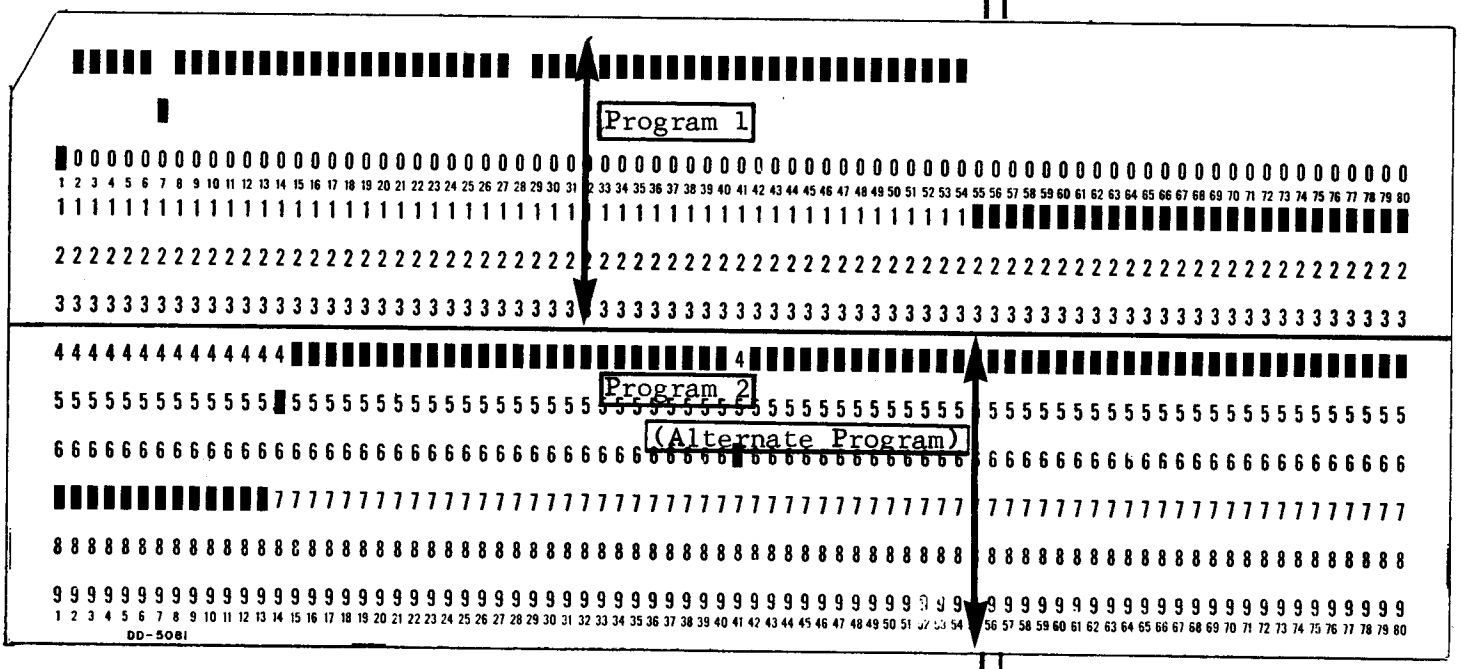
With this feature the operator may Punch two different card formats, each under the control of a different program, without entering a new program card.

179.

Below is an example of a program card containing 2 programs. Where is Program 1 Punched? _____

_____

Top half of card



180.

Program 1 uses the 12-11-0-1-2 and 3 punches.

What rows are used for Program 2?

4 through 9

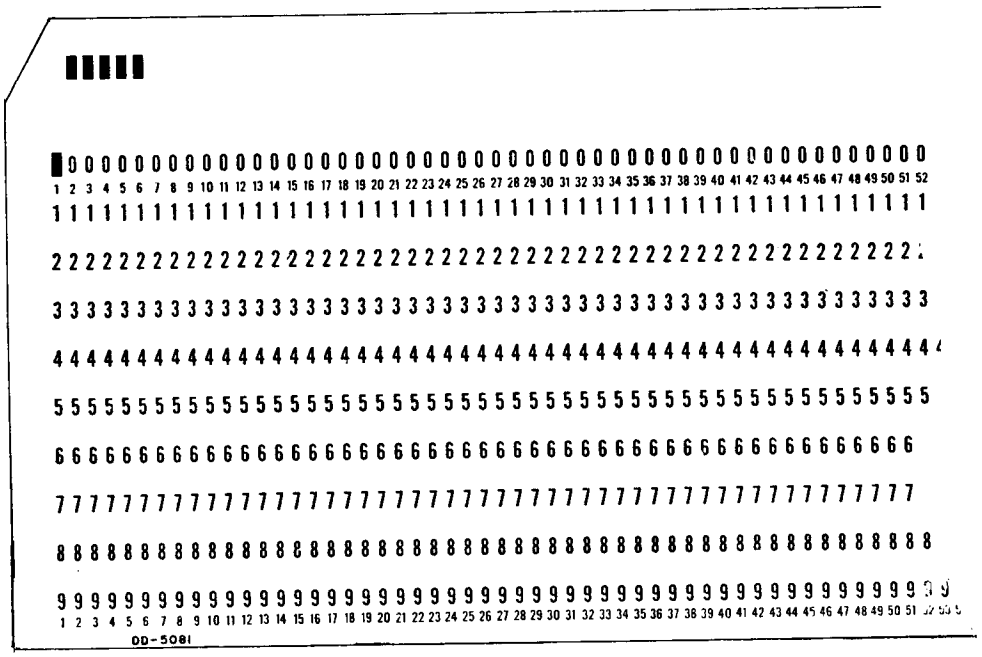
181.

From the card in frame 179 above, the first field of program ___ is reproduced below.

What is punched in column 1? _____

What is punched in the remainder of the field? _____

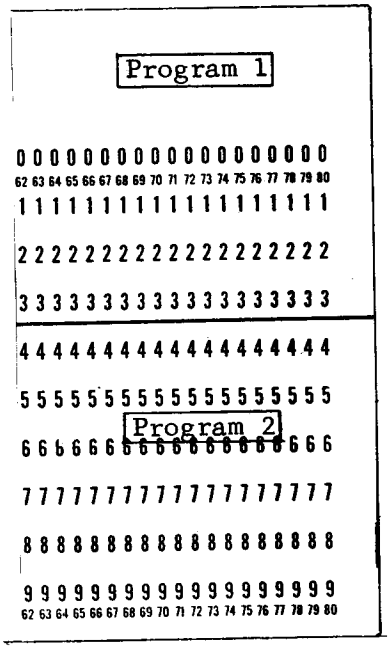
Draw a line to separate Program 1 and Program 2.



1

"0" punch

12 punches



182.

The O-punch in column 1 in the previous frame tells the machine that it is the beginning of an Automatic Duplicate field (a date for example, which will be the same on each card).

Can you guess what the 12-punch in each remaining column of the field tells the machines?

That it is a continuation of the field.

183.

What does the instruction in columns 1 through 6 tell the machine?

How could you make the above instruction continue through column 12?

That the field from 1 through 6 is a Duplicate field which will be the same from card to card.

Put 12-punches in each column from 2 through 12.

184.

The same instruction could be put in Program 2. To do this column 1 would have a 6-punch. Columns 2 through 6 would contain_____punches.

- ☐ 3 punches
- ☐ 4 punches
- ☐ 5 punches

4 punches

185.

Below is a table which tells you the coding necessary to perform several automatic functions.
The first column lists the things that you can program the machine to do. What is the title of the column?

FUNCTION	CODE		WHERE PUNCHED
	PROG 1	PROG 2	
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only. Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

FUNCTION

186. The two columns to the right of FUNCTION tell you the _____ necessary to perform the function.	codes
187. The PROG. 1 area (column of the chart) tells you what punch to use if you want the function performed by the : ☐ First Program ☐ Second Program What does the second area under CODES tell you?	First Program What the punch is for PROG. 2
188. What is the heading of the last column of the chart?	WHERE PUNCHED
189. Locate the function you want in the first column of the chart and follow the line across; you will find _____ _____ in the next column. Then, how do you find out where to put the punch?	the code By following the line across

190.

The chart below shows you the Punching necessary to perform all possible automatic operations while Key Punching. On the example program which you saw above, the second field of Program 1 starts with an 11-punch. From the chart below, what does the 11-punch mean?

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

Start Skip

191.

What is the first function on the chart?

ALPHA SHIFT

This causes the machine to automatically shift into the _____Mode.

ALPHA

192.

Where do you put the 1-punch for ALPHA SHIFT?

In each column where there will be an ALPHA character

What is the first code for Program 1?

1

What is the first code for Program 2?

7

193.

What Program 1 code do you use to make the machine Duplicate a field?

Where do you put the punch?

0

First column of a field

194.

From the chart, what code do you use to show how far the field continues? (For Program 1)

If a Skip field were in Program 2, what codes would be Punched?

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

12-punch

5-punch in the first column and 4-punches in the other columns of the field

195. From the chart, how many functions can you program to be controlled automatically? What are they? 1. 2. 3. 4. 5. 6. 7.	7 1. ALPHA 2. DUPLICATE 3. SKIP 4. FIELD LENGTH 5. SKIP START FROM THE KEYBOARD 6. START RIGHT JUSTIFY 7. STOP RIGHT JUSTIFY
196. To produce a program card, the operator first decides what she wants the program to do for her. Assume that you want to punch a lot of _____ with a different name and employee number in each.	cards
197. The cards you are using are preprinted with fields in which 16 columns are for the last name and columns 17 and 18 for the initials. If the name does not occupy the entire field, what are two ways you could get from the the last character in the name to the end of the field. 1. _____ 2. _____	1. Space Bar 2. SKIP key when the field is defined

198.

Which of the two possibilities above is best?

What is SKIP similar to on a typewriter?

SKIP

Tab key

199.

Making a program card which defines a field for the SKIP key is like which operation on a typewriter?

Setting tab stops

200.

From the chart of program codes, what Punching do you have to do to program the name field for Manual Start Skip?

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

Blank in the first column, and 12-punch in the remainder of the field

You must also program a name field for ALPHA.

How is ALPHA programmed?

1 in each column where needed.

201.

The field 19 through 28 is blank. This should also be a _____ field.

How is it different from the first Skip field?

Skip

The first Skip field has some data in it and must be started from the Keyboard.

202.

This field can be programmed for a totally_____ **Skip.** Find the code for this on the chart and write it here.

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only. Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

automatic

11 for first column and 12 for remainder of field

203.

The next field is a Manual field of constant length. Is any programming necessary for this field?

(Columns 29-34)

No

204. The next field on the card is the name of a plant where the employee works and is the same on every card. This will be a Duplicate field. What coding will you use to cause the Duplication without any key depression?	0 in first column (35) and 12 in the remainder of the columns in the field (50)
205. The final field in this card is blank, so to save time, we wish to get the card out and start on the next card as quickly as possible. (columns 51-80) What programming will accomplish this?	11-punch in first column (51) and 12-punch in the remaining columns (52-80)
206. Now remember, this program is only 1 of 2 possible programs that you could put on a single program card. Would the program you just wrote be classified as a Program 1 or a Program 2? Why?	Program 1: It is punched in the top half of the card.

207

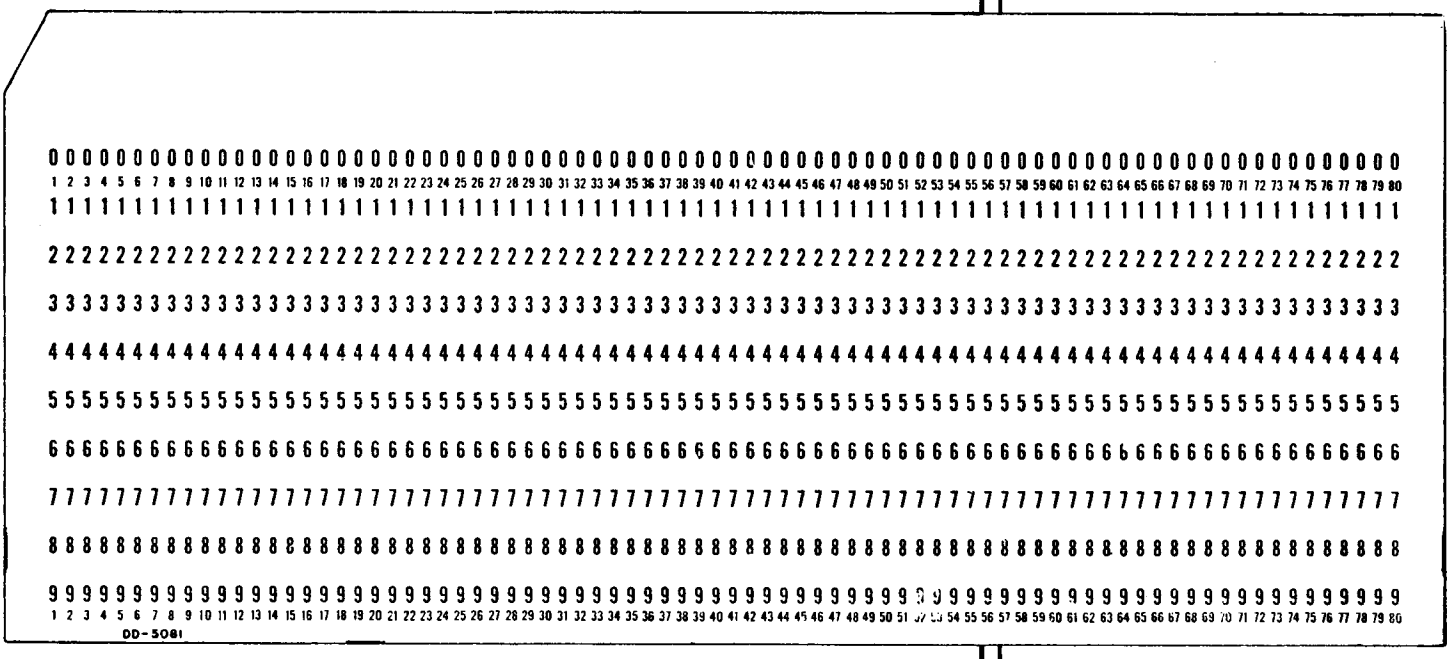
Could you have written this program as a Program 2?

yes

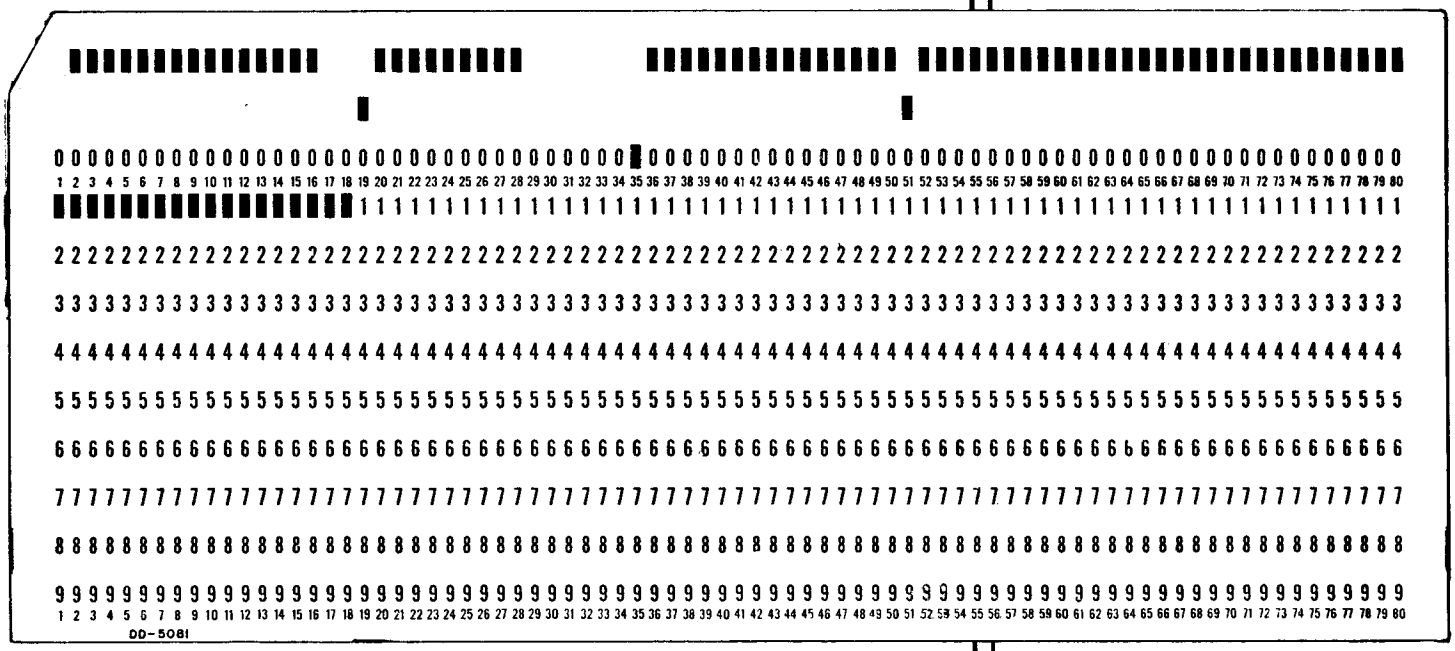
If you have a machine available, Punch the program you just wrote in both the Program 1 and Program 2 areas of a card. Use the MULT-PUNCH key. If there is no machine available, indicate with a pencil on the card below the necessary Punching.

Columns 1 - 16	Name
Columns 17 - 18	Initials
Columns 19 - 28	Blank Auto Skip
Columns 29 - 34	Manual field (no coding)
Columns 35 - 50	Duplicate field
Columns 51 - 80	Auto Skip

ANSWER IN NEXT FRAME



207. Answer



208.

From the code chart what coding would be necessary to cause an Alpha Shift in columns 31 to 46 in Program 1?

1-punch in <u>each column where required</u>

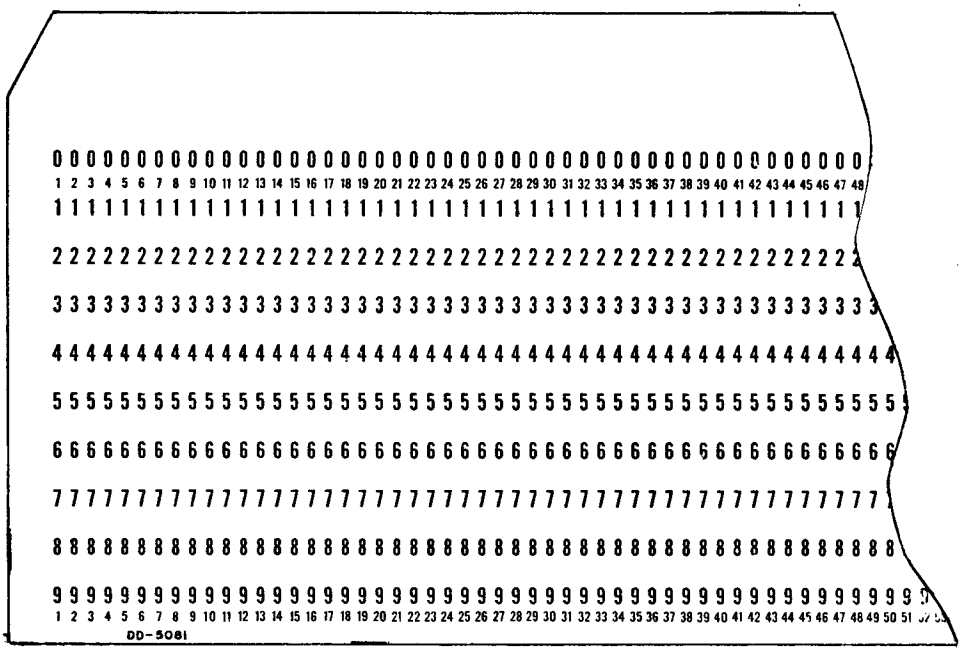
In Program 2?

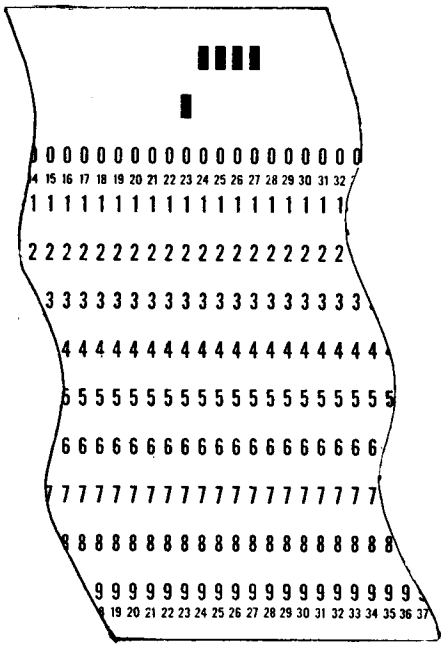
7-punch in each column

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

209.

If you have a machine, Punch a program card which will cause a Skip from column 23 to 27 for Program 1 and an Alpha Shift in the same field of Program 2. If you have no VP or VIP available, mark the Punching necessary on the card below.





210

Using the chart, Punch or mark a card with a number 2 Program to do the following:

Columns	1 - 8	Duplicate
Columns	9 - 15	Skip
Columns	16 - 38	Alpha Shift
Columns	39 - 69	Manual Entry (no coding necessary)
Columns	70 - 80	Skip to end

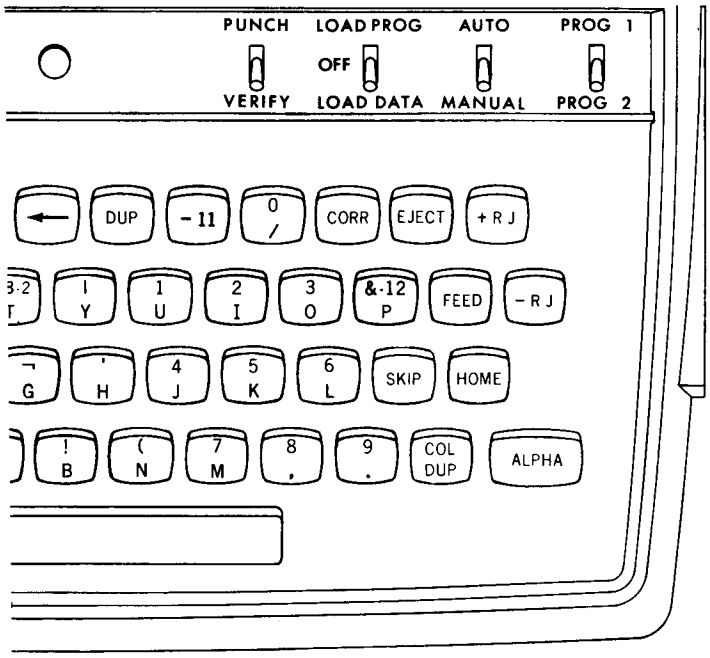
211

If you want an Automatic Shift to Alpha condition for a 5 character field, what do you put in the program card?
(Use the chart)

a 1 or a 7 (depending on whether it is Program 1 or 2) in each column needed

212

The two programs in Storage may be entirely independent or they may be related. The operator can choose either by setting a switch; find it on the Keyboard Chart. Where is it?



Top row of switches, first switch on right

213

Look at the switch next to the Program Selection Switch.

How is it labeled?

AUTO
MANUAL

214

When this switch is set to AUTO, Skipping, Duplicating, etc., are fully under _____ control. However, when set to MANUAL, activities must be initiated from the Keyboard, but field length for Skipping and Duplicating is still defined by the _____.

What happens when you hit Skip in MANUAL Mode?

program

program

Skipping and clearing of Storage to the end of the card

215 How can an operator use this feature to clear data Storage?	Hit SKIP twice.
216 There are two types of skip on this machine. One is fully_____. The other requires you to hit the SKIP key to start the _____.	automatic SKIP
217 To enter your program into_____, you must; 1. Set LOAD switch to _____ _____ 2. Insert the _____into the Auxiliary Input 3. Push_____ The card is then read and automatically fed to the _____Stacker.	Storage LOAD PROG card FEED Select
218 Describe the production of a program card	The operator: 1. Inserts blank card into the Auxiliary Input, 2. Feeds it, 3. Keys appropriate code (using Multi-punch key if necessary), 4. Feeds and Punches card, 5. Removes punched card from stacker.

219 How do you load it into Storage?	1. Insert card in Auxiliary Input. 2. Switch LOAD switch to LOAD PROG. 3. Hit FEED. (to Feed and read card) Program is now in Storage. Card goes to the Select Stacker. (Be sure to set LOAD switch to OFF before continuing.)
220. Two programs can be punched in one card by either of two methods. 1. Punching both at once 2. Running the same card through twice How would you punch program information in both program areas at once if two punches were required in the same column? a. b.	a. By using the MULT-PCH key and hitting two numeric keys b. By hitting a character key which has the needed punch combination

221.

As an example of answer number 2 above, if you wanted to start a Skip field in both Program 1 and Program 2 in column 1, you could find a character on the chart of characters which is a combination of the 11-punch and the 5-punch. What is that character?

12 or Y plus	A 1	B 2	C 3	D 4	E 5	F 6	G 7	H 8	I 9
11 or X plus	J 1	K 2	L 3	M 4	N 5	O 6	P 7	Q 8	R 9
0 plus		S 2	T 3	U 4	V 5	W 6	X 7	Y 8	Z 9

NOTE: The 1 punch is not used here.

N

222.

If you skipped the section which taught you how to make a program card, you may copy the program on the following page and use it for this problem.

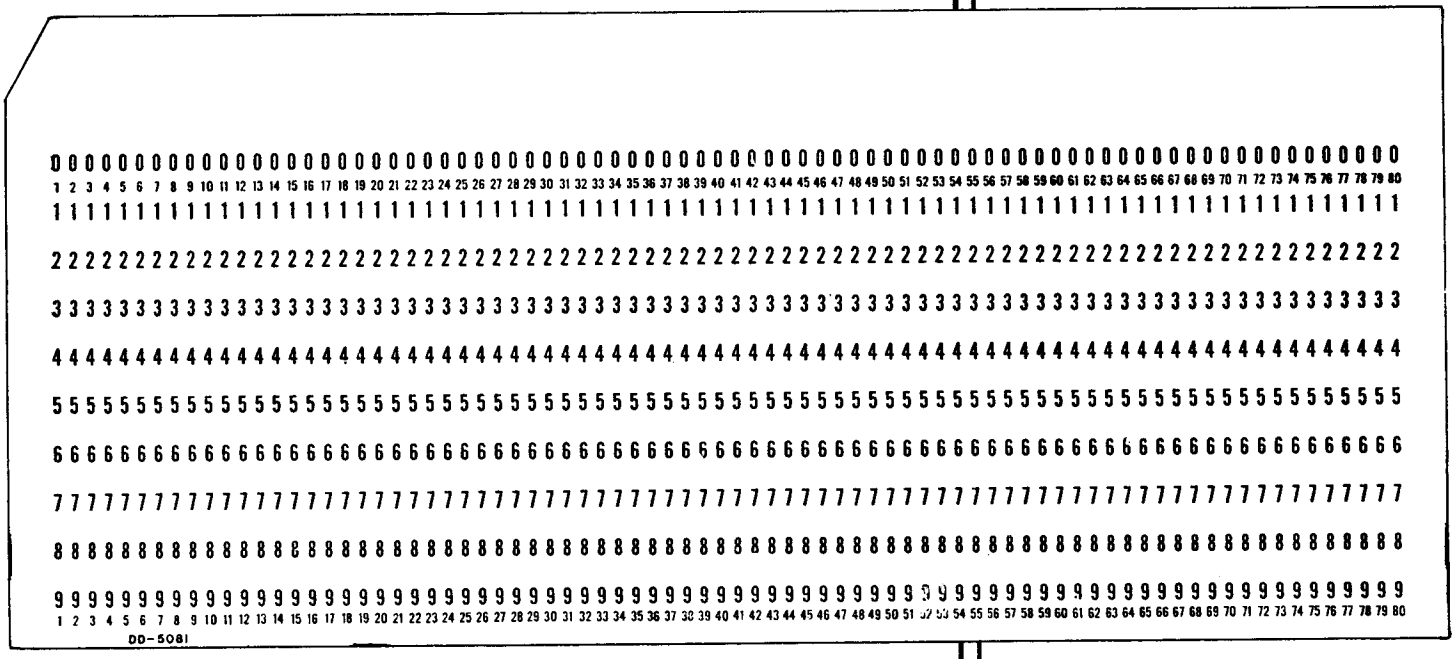
Punch or mark a card with the following program.

Program 1		
Type of Field	Columns	Function
Part name	1 - 15	Alpha Shift & Man. Skip
Location	16 - 38	Duplicate
Part No.	39 - 47	Manual
Blank	48 - 54	Skip
No. on Hand	55 - 60	Manual
Blank	61 - 80	Skip

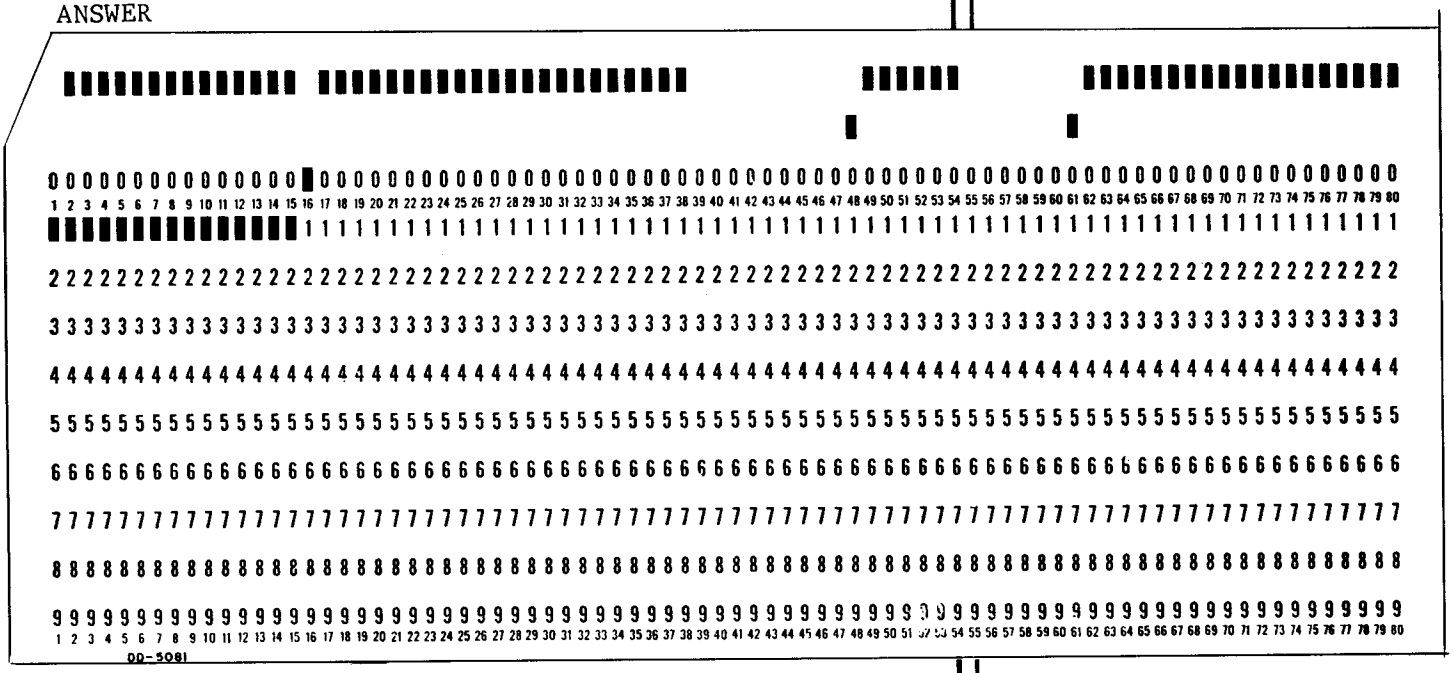
BLANK CARD ON NEXT PAGE

ANSWER ON NEXT PAGE

222 Cont.



ANSWER



223.

Before starting a new job, hit the _____ key to clear storage.

How many times should you hit SKIP?

SKIP

twice

224.

Automatic Duplication requires that the data to be Duplicated be stored in Core_____.

There are three ways that it can get there:

1. It is retained from the proviously read card.
2. It is Punched into a card and fed through the _____ _____ with the LOAD switch set to _____ _____.
3. It is entered through the Keyboard while in MANUAL Mode.

Storage

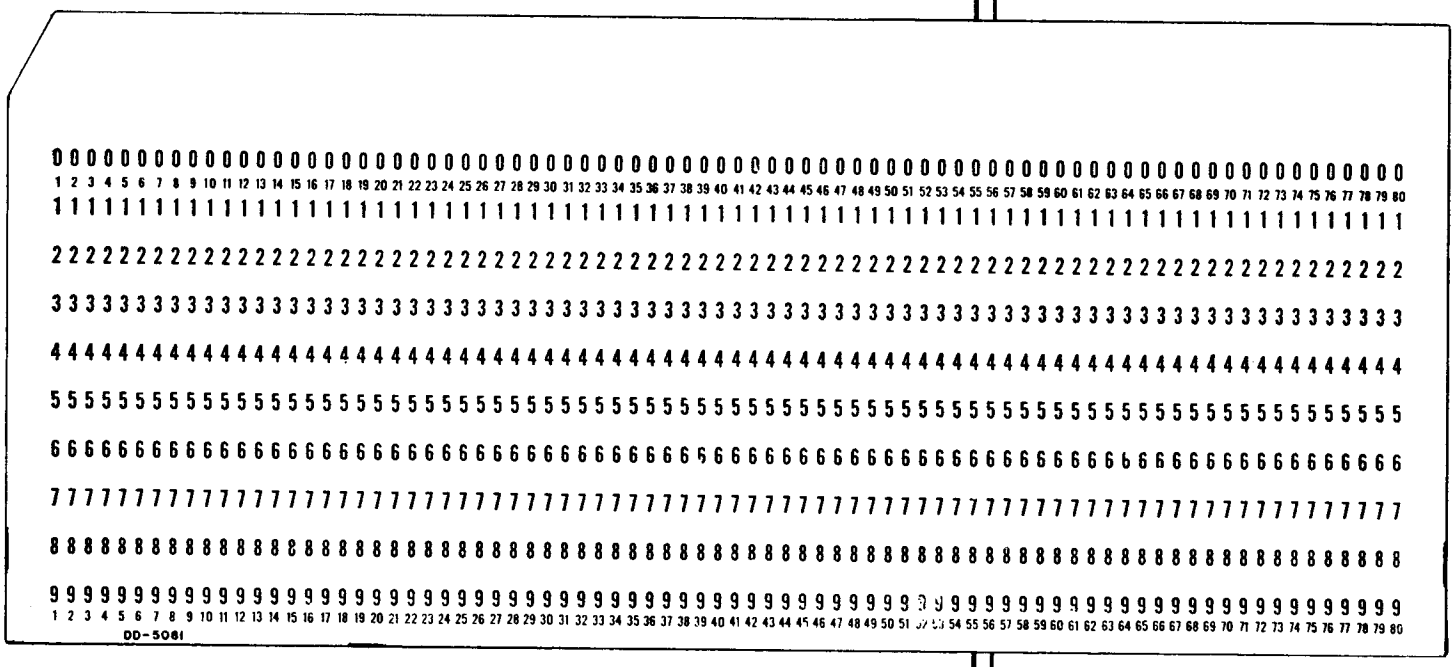
Auxiliary Input

LOAD DATA

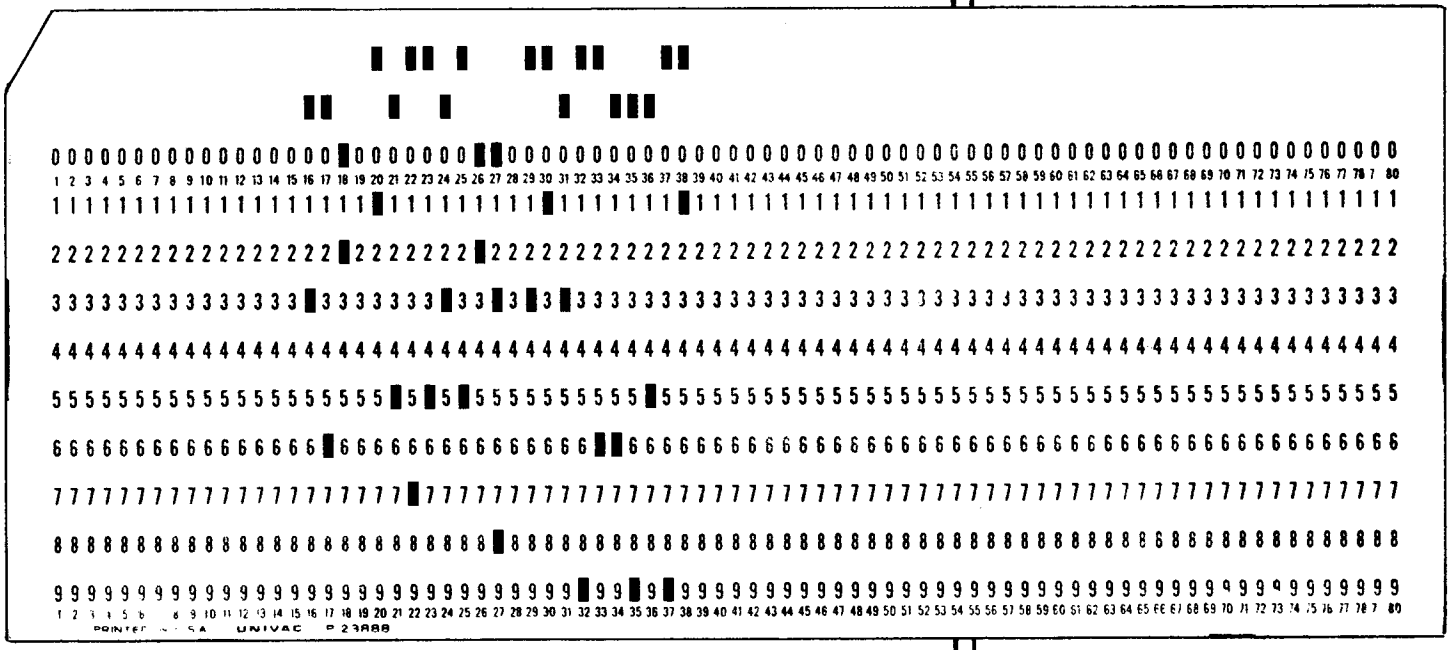
225.

Punch a master data card with the name Los Angeles, California in columns 16 - 38.

ANSWER ON NEXT PAGE.



225. Answer



226.

You are now ready to begin Punching using the program card you just Punched.

How do you Load the program?

1. Set to LOAD PROG.
2. Insert card in Auxiliary Input.
3. Hit FEED.
4. Set LOAD switch to OFF.

227

If you have a machine, perform the operations from the previous frame.

What happens to the program card?

Ejected to Select Stacker

What happens to the programs?

Entered into Core Storage

228.

Assume you are going to operate with Program 1.
What do you have to do next?

How is this done?

If you have a machine, load the master data card.

Load data for Duplication field. (Master data card)

1. Set to LOAD DATA.
2. Enter card through Auxiliary Feed.
3. Hit FEED.
4. Set to PROG 1.

229.

If you have a machine, Punch these data into cards using the program that you just entered.

Part Name Cols. 1 - 15	Location Cols. 16 - 38	Part No. Cols. 39 - 47	Quantity on Hand Cols. 55 - 60.
Table	Los Angeles, California	855537790	8,964
Desk, Exec.	Los Angeles, California	132776778	1,896
Desk, typing	Los Angeles, California	132776766	2,766
Cabinet, file	Los Angeles, California	991254593	0,962
Basket, in/out	Los Angeles, California	332554673	6,800
Basket, waste	Los Angeles, California	332554157	5,537

Save the cards you just punched, you will use them later.

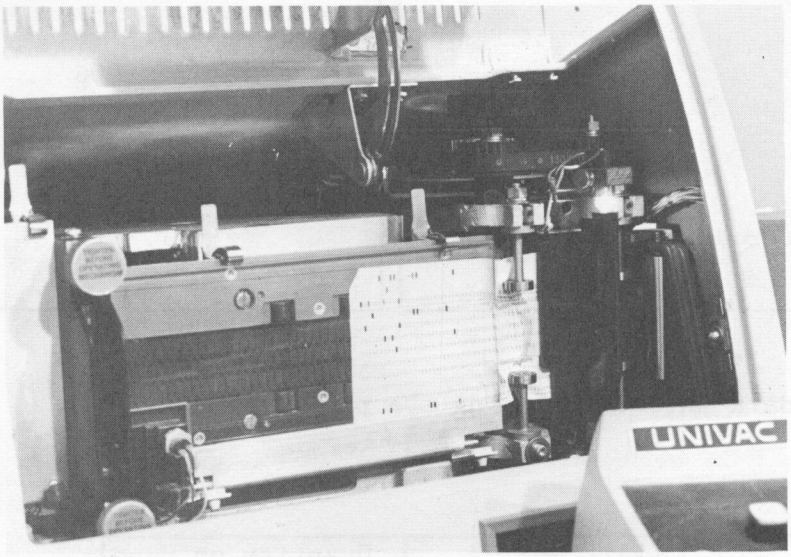
230.

If your Verifying Punch should ever have a card jam, you will want to know how to clear the jam.
A card could become jammed in the Visible Station.
The Visible Station is covered by a clear glass plate held in place by two clips at the top and hinged at the bottom. To clear a jam in the Visible Station, open the cover release the c _ _ _ _, and lower the glass plate out from the top.

clips

231.

Below is a picture showing a simulated jam in the _____ _____. The Read Unit can be completely removed to allow easy access for removal of the _____.

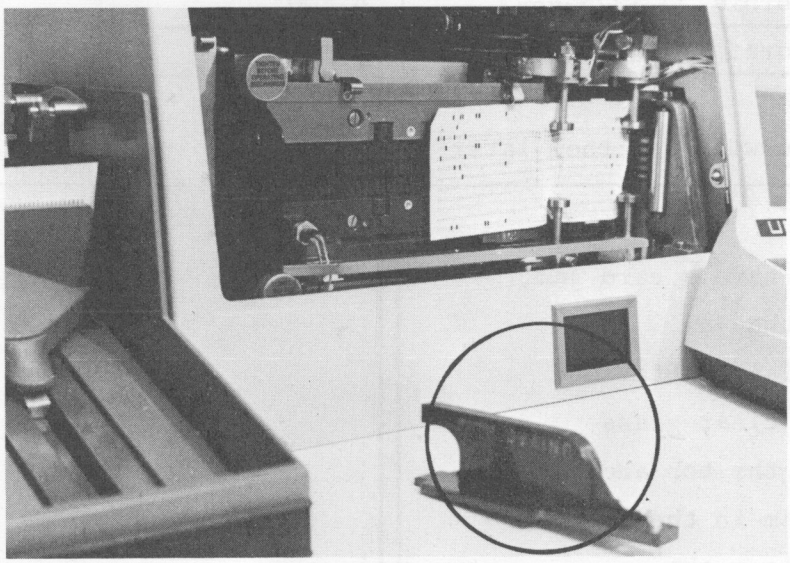


Read Unit

jam

232.

What is shown on the area circled on the picture below?

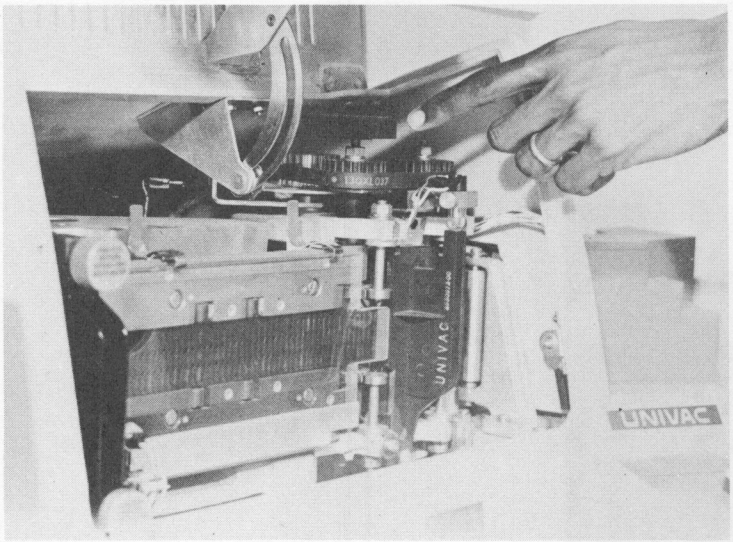


The Read Unit

removed

233.

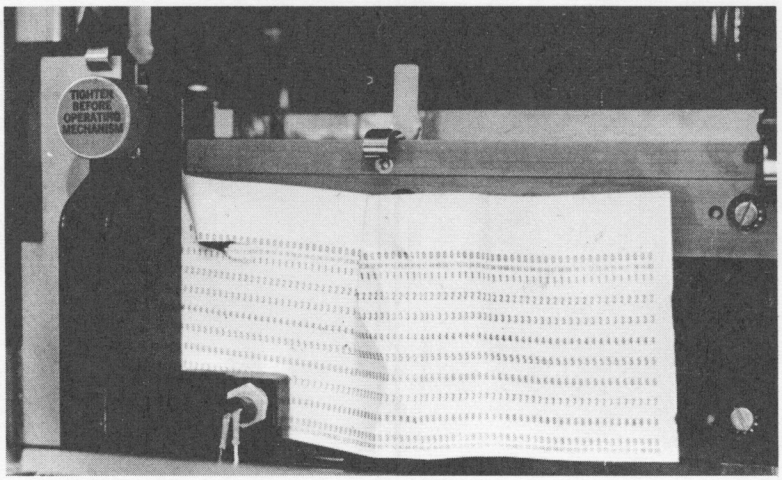
After removal of the _____ _____, the card can be removed by turning the Disk indicated in this picture. It will only turn in a clockwise direction which will move the card to the left.



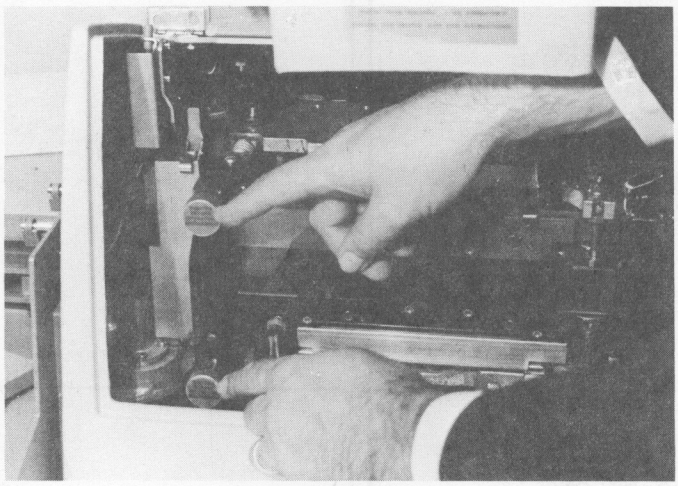
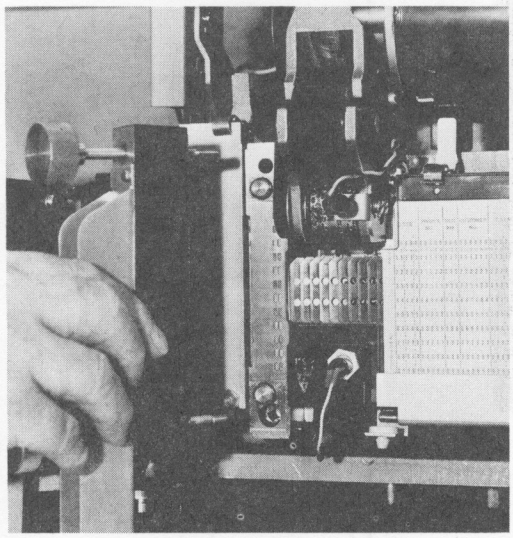
Read Unit

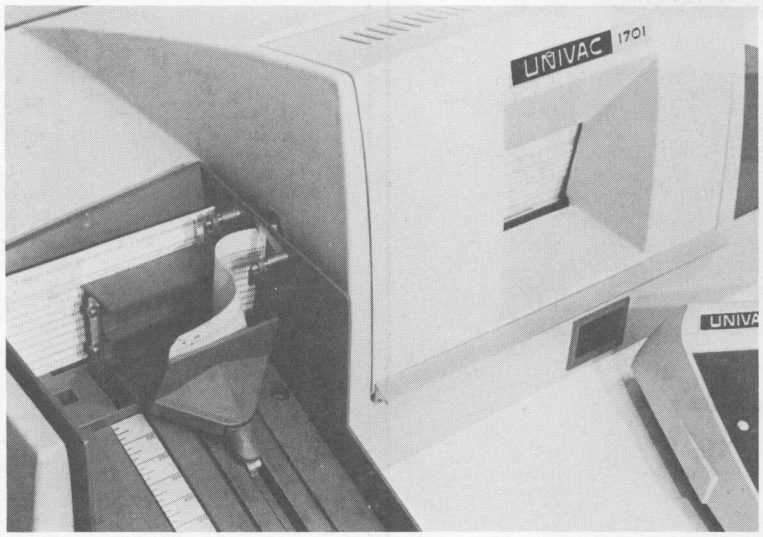
234.

The next area in the card path which could become jammed is the _____ unit. The picture below shows such a condition.



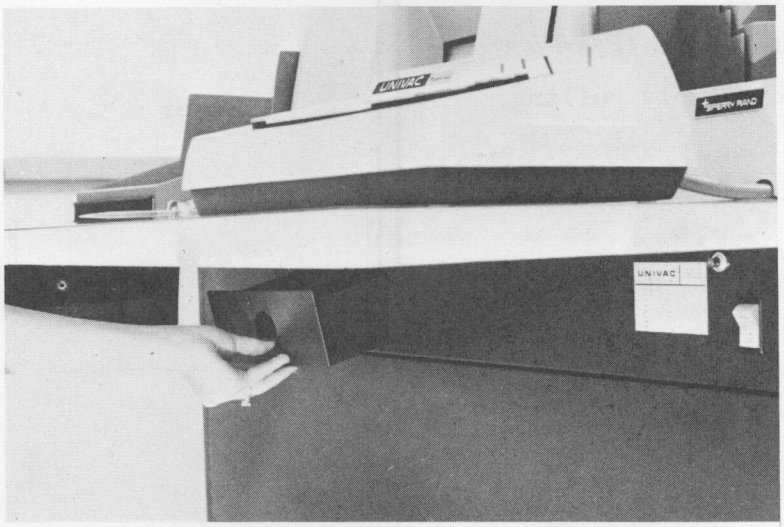
Punch

235. **From the above information, how would you clear a Punch jam?**	Remove the Punch Unit
236. The two fingers on the picture below show the screws which you would loosen to remove the _____ _____. 	**Punch unit**
237. What is shown below?  NOTE: When you replace the Punch unit, be sure that **both knobs are tightened securely.**	**The Punch unit removed**

238. The card can now be removed by _____ _____.	pulling it back to the right
239. One final possible jam is shown below. It is a _____ jam. You can clear it by simply pulling the card through.  	**Stacker**
240. Most jams damage the _____ which is jammed. How can a card jammed at the Punch Station or the Stacker most easily be replaced?	card **Duplicated from Storage**
241. How else could you replace a damaged card?	Repunch it from the source document -or- **Read the card in LOAD DATA Mode and** Duplicate from Storage

242

In addition to the removal of card jams, the operator is also responsible for emptying the container of punch chips. In order to empty the _____, you must pull out the drawer shown in the picture below.



chips

243

Your 1701 or 1710 is protected from surges of electric power by a circuit breaker. If too much _____ passes through the breaker, it will shut off. When this happens, the circuit breaker must be "reset"; this is done by pressing the Reset Button next to the Power ON-OFF switch.

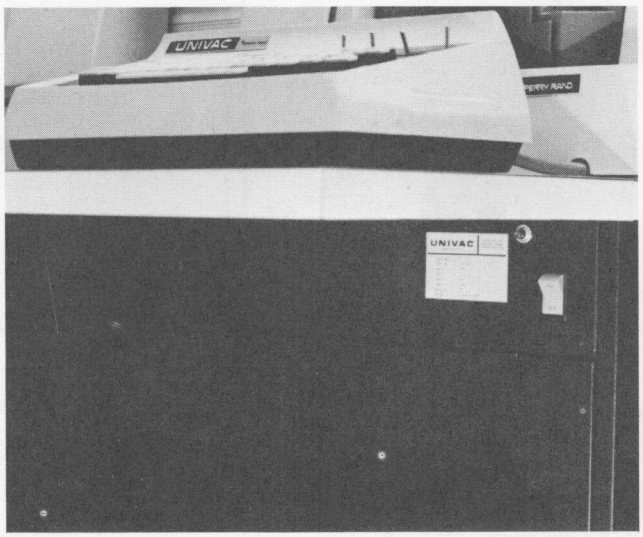
electricity
(or current)

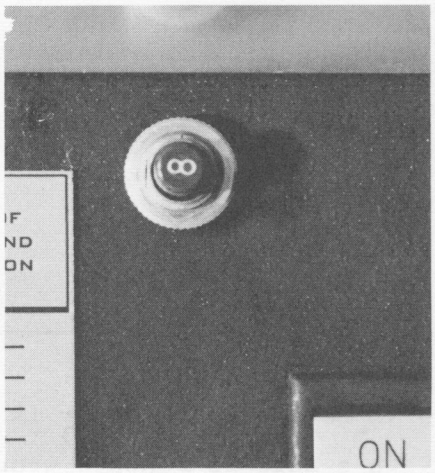
244

If the circuit breaker immediately goes off again or cannot be_____, it is an indication of trouble, and a service man should be called.

reset

Label the Circuit Breaker Reset Button on the picture below.





245

Generally, when an operator finds her machine will not turn on, one of two things is at fault:

1. The _____ _____ is tripped.
2. The power cord is unplugged.

Circuit Breaker

246

Check the duties that are required of the operator with regard to continued efficient machine operation?

All 5

- ☐ 1. Emptying the chip box
- ☐ 2. Clearing the card jams
- ☐ 3. Keeping the card path clean
- ☐ 4. Keeping the cover and table top clean
- ☐ 5. Resetting of circuit breaker

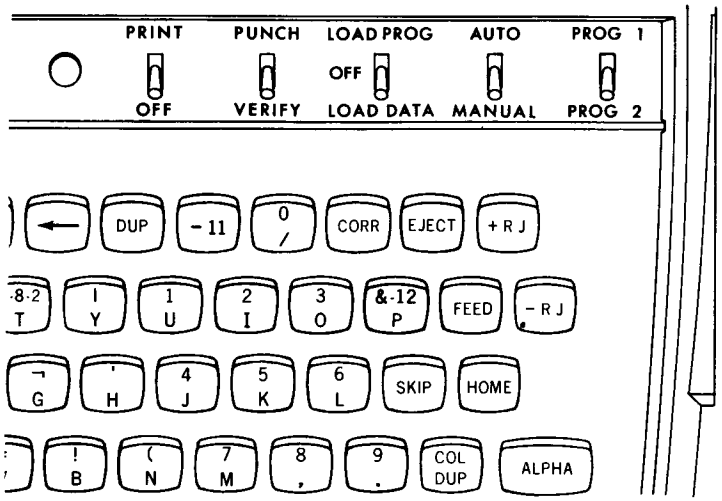
EXPRESS STOP 9 What is Key Verifying?	Checking the accuracy of a punched card by rekeying the data and having the machine compare the two If you have answered correctly, SKIP TO FRAME 256 on PAGE 105.
247 In business, accuracy is very important. If one hole in a card is Punched wrong, a serious error can result. Example: If a payroll processing card is Punched through the 9-position instead of the 1-position, an employee can receive a check for $900 instead of $100. This not only will throw off the company's accounting records, but also could result in great embarrassment for the employee and company, upon detection of the mistake. The method commonly used to insure Punched card accuracy is called Verifying. How can Punched card data accuracy be assured?	by Verifying
248 When Punched cards are checked by a Verifying operator for the_____of the information that has been Punched into them previously, they are undergoing_____. What is the main purpose of Verifying?	accuracy verification to check for the accuracy of previous Punching

249 What is Verification?	The process of checking to establish the accuracy of data Punched into cards (or equivalent)
250 When cards contain identical data and the edges are in alignment, the holes will also be in alignment. Two methods of Verification are based upon the above fact. Can you guess what they are? 1. 2.	1. visual sighting 2. needling
251 The visual sighting method consists of looking through the aligned cards to see if the holes go completely through. The _____method consists of inserting a needle through the deck.	needle
252 A third manual method of card Verification is to interpret the cards, this means to print the characters represented by the _____ and then to compare them visually to the original. If the original is machine readable, this comparison can be made by a computer.	holes

253 Name 3 methods of Verifying without the use of Key Verifying machine.	1. Visually sighting 2. Needling 3. Interpreting and comparing
254 Many machines have been designed specifically for _____ Punched cards. These machines are similar to Key Punches and are called _____ Verifiers. Your machine is both a Key _____ and a Key _____.	Verifying Key Punch Verifier
255 Punching and Verifying are performed as separate operations which require two passes of the cards. First, the cards are Punched from the _____ _____; then, the punched cards are placed back in the _____ Magazine. The machine is set to _____ and the data are again _____ from the source documents. The 1701/1710 compares the data punched in each card column with the data keyed in. When an error is detected, it can be corrected quickly and easily.	source documents Input VERIFY keyed

256
On the Keyboard diagram, find the switch which sets the machine to VERIFY.

Where is it?



Top of Keyboard, 4th switch from the right

257
When you are Verifying, you will key in data just as when Punching. As long as the data from the Keyboard agree with the data already _____, the operation will proceed; but, if a key depression does not agree with _____ the operation will _____ and the yellow Non-Match Indicator light will come on.

Punched

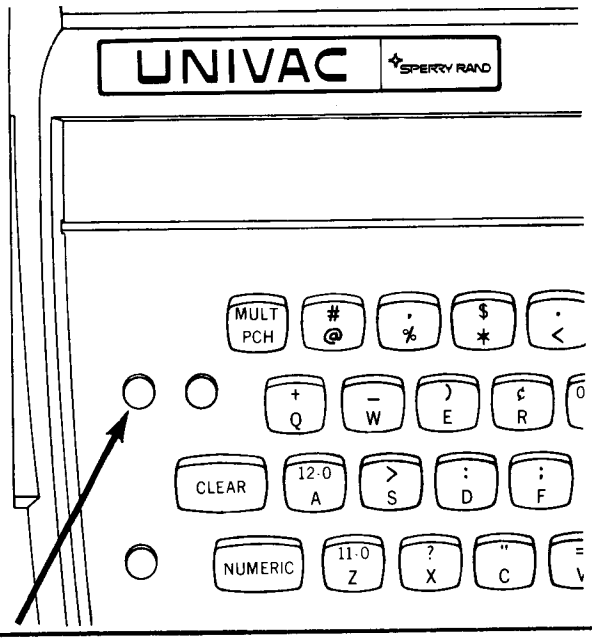
data Punched in card

stop

258

If the card is correct, it will be automatically released after column 80 is keyed, into the _____ _____.

Output Stacker

259 The yellow _____ _____ _____ is shown below by an arrow.  	Non-Match Indicator
260 Next to the _____ Non-Match Indicator is a red Error Indicator. When the operator strikes a key which does not match the data in the memory (from the card being _____), what happens?	yellow Verified The yellow Non-Match Indicator comes on.
261 When the Non-Match Indicator comes on, the Keyboard interlocks and the red Interlock _____ comes on.	Indicator

262

When the Non-Match Indicator comes on, the operator should recheck the source data, hit the _____ key to release the interlock condition and attempt to key the data again. If there is a match this time, the Non-Match light will not come on and you may proceed.

If you again get a non-match, you may try once more to rekey it. Describe the procedure for the third attempt.

CLEAR

Recheck the source document. Hit the CLEAR key and rekey the data.

263

After the third non-match, the red Error Indicator comes on. What does this tell you?

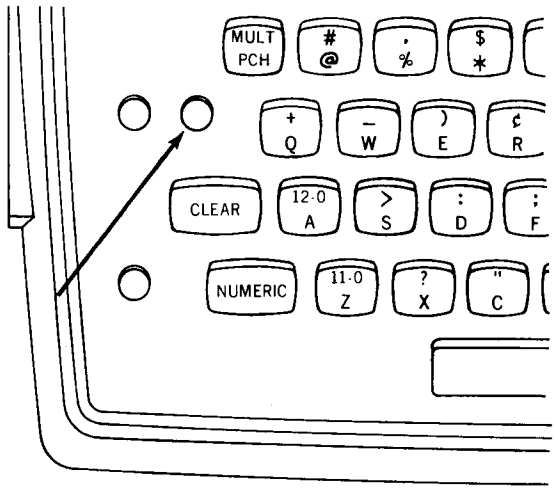
When you find an error, the card must be corrected; but, you do not have to repunch the entire card.

The punched card is wrong.

264

The red light mentioned in the previous frame is indicated below.

What must you do when it comes on?

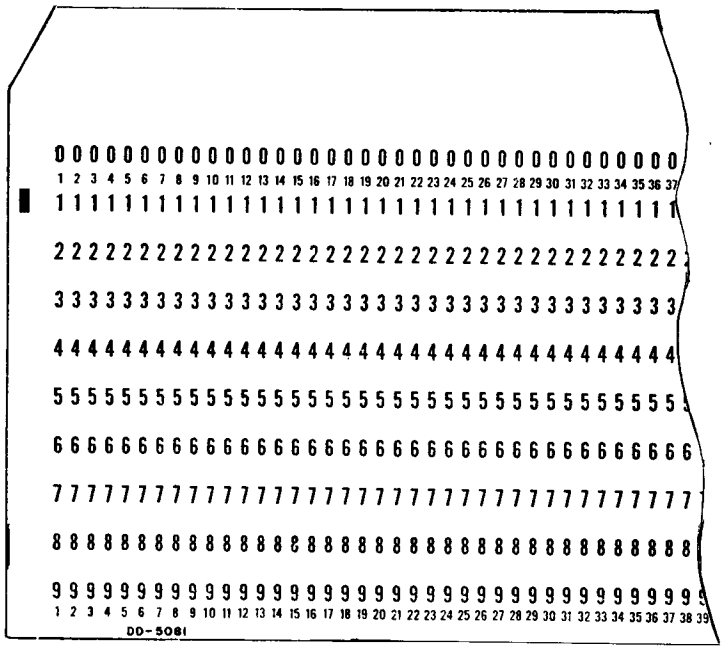


Correct the error

265 When the Error light comes on, the Keyboard is automatically set for the entry of data into Core Storage. You may now key in the _____ data. This, of course, does not change the card which has been punched, but it does change _____.	correct Storage
266 After making the correction, the operator can continue _____ the remainder of the card.	Verifying
267 The card will not automatically feed. This is to prevent feeding of the next card in the hopper to the _____ Station. The operator now inserts a blank card into the _____ Input.	Visible Auxiliary
268 With the blank card in position, the operator hits the _____ key, which ejects the E _ _ _ _ card to the S _____ S _____ and Feeds the blank to the Visible Station. The card is then automatically fed, Punched with data, and sent to the Output Stacker.	FEED Error Select Stacker

269

This new card is also corrected punched as shown below to indicate_____.



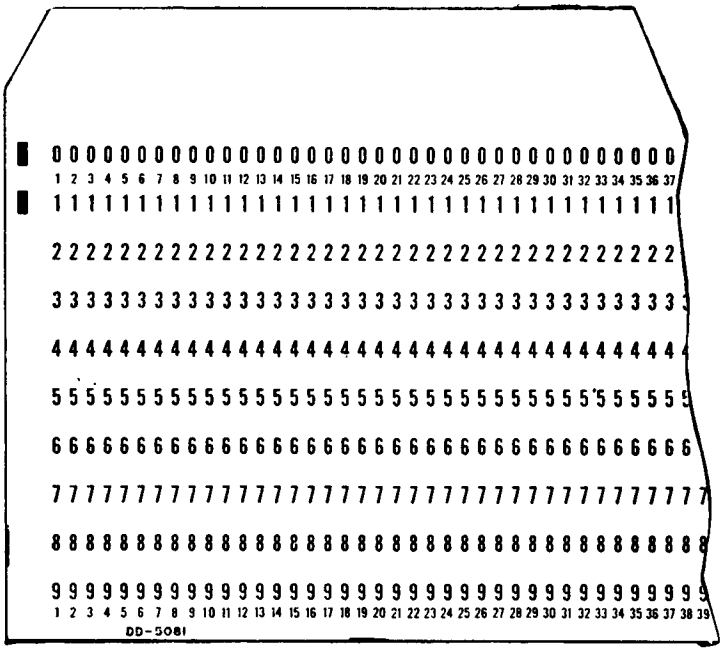
that it is a corrected card

NOTE: This special punch precedes col-1; this position is called column minus 1

270

If the card is completely Verified with no errors found, it is OK punched as follows.

How is this Punching different from the Punching in a corrected card?



A corrected card has a 1-punch in column minus 1.

An OK card has two punches in column minus 1 (in the 1 and 0 positions).

271. Describe the Verify process. 1. Load _____ _____. 2. Hit _____. 3. Key_____from s_____documents. 4. What happens if no error is found?	1. punched cards 2. FEED 3. data source Card is released and OK Punched in column minus 1.
272. When an error is found, the following occurs: The _____ Non-M_____ Indicator comes on. The operator should then: 1. 2. If the Non-Match Indicator comes on again, what do you do?	Yellow Non-Match 1. Hit CLEAR 2. Rekey the data Repeat above
273. After the third attempt to key the data, the _____ E _ _ _,_ Indicator comes on. The operator may now change the _____ in _____ by striking the right key.	Red Error data Storage
274. What happens next? What does <u>not</u> happen at the end of the card? The operator inserts a _____ _____into the _____ _____and depresses the_____ key.	Verification may continue. Automatic feeding blank card Auxiliary input FEED

275. What happens at the depression of the FEED key?	Error card at Visible Station is ejected to Auxiliary Stacker without either an OK or a Corrected Punch. Blank card is fed from the Auxiliary Input to the Visible Station.
276. The new card is also P _ _ _ _ _ _ as C _ _ _ _ _ _ _ _ _ The Corrected card goes to the _____ _____ and the next card is _____.	Punched Corrected Output Stacker fed.
277 Explain how the 1701 or 1710 is used to Verify information.	1. A deck of cards that have already been Punched from source documents is loaded into the Input Magaine. 2. The VP or VIP is switched to VERIFY. 3. As each previously punched card is fed into the Visible Station and the card is read and stored, the Verify operator first looks at the original source document, then keys the information to be compared with the image in Storage. CONTINUED ON NEXT PAGE

277. Cont.	4. If all of the information on the card to be Verified is correct, the card will be marked OK and fed into the Output Stacker after passing column 80. 5. If there is any discrepancy between the original source document information that is keyed in and the original card to be Verified, a yellow Non-Match Indicator will light. 6. Three attempts to key the data may be made; if a match is not found on one of these attempts, a red light comes on and the card must be corrected by first correcting data in memory, then inserting a blank card, and Duplicating the corrected data from Storage into the next card.
278. Each of the keys described in the Punching section of this book has approximately the same function when_____. The Key Function Chart lists any difference when Verifying.	Verifying

279.

What happens when you hit the DUP key in Verifying Mode? (Use the Key Function Chart.)

Column Indicator advances until a non-match is encountered or the beginning of a new field.

280.

What does the CORR key do during Verifying?

It allows the operator to modify an entire field in storage; the card is then treated as an error card.

281.

Program control can also assist the operator when Verifying. The same codes are used to make a Verify program.

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only. Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

282.

Can the same program cards you used for Punching be used for Verifying?

Describe the loading of a program card for use in Verifying.

FUNCTION	CODE PROG 1	CODE PROG 2	WHERE PUNCHED
ALPHA SHIFT	1	7	In each column where ALPHA SHIFT is required
DUPLICATE	0	6	In first column of the field only
SKIP	11	5	In first column of the field only
FIELD LENGTH	12	4	In each column of the field after the first
SKIP or DUP (START FROM THE KEYBOARD)	Length of Field Definition is all that is required (12 in each column except first)		
START R J	11-1	5-7	First column of field only Followed by length of field definition.
STOP R J	12-11-1	4-5-7	Last column of the field only

Yes

1. Insert in Auxiliary Feed.
2. Set to LOAD PROG.
3. Hit FEED.
4. Reset LOAD switch to OFF.
5. Set to Verify.

283.

If you have a machine available, take the cards which you Punched at the end of section 1 and Verify them.

Here is a copy of the source data.

Part Name Cols. 1 - 15	Location Cols. 16 - 38	Part No. Cols. 39 - 47	Quantity on Hand Cols. 55 - 60.
Table	Los Angeles, California	855537790	8,964
Desk, Exec.	Los Angeles, California	132776778	1,896
Desk, typing	Los Angeles, California	132776766	2,766
Cabinet, file	Los Angeles, California	991254593	0,962
Basket, in/out	Los Angeles, California	332554673	6,800
Basket, waste	Los Angeles, California	332554157	5,537

Save the cards you j

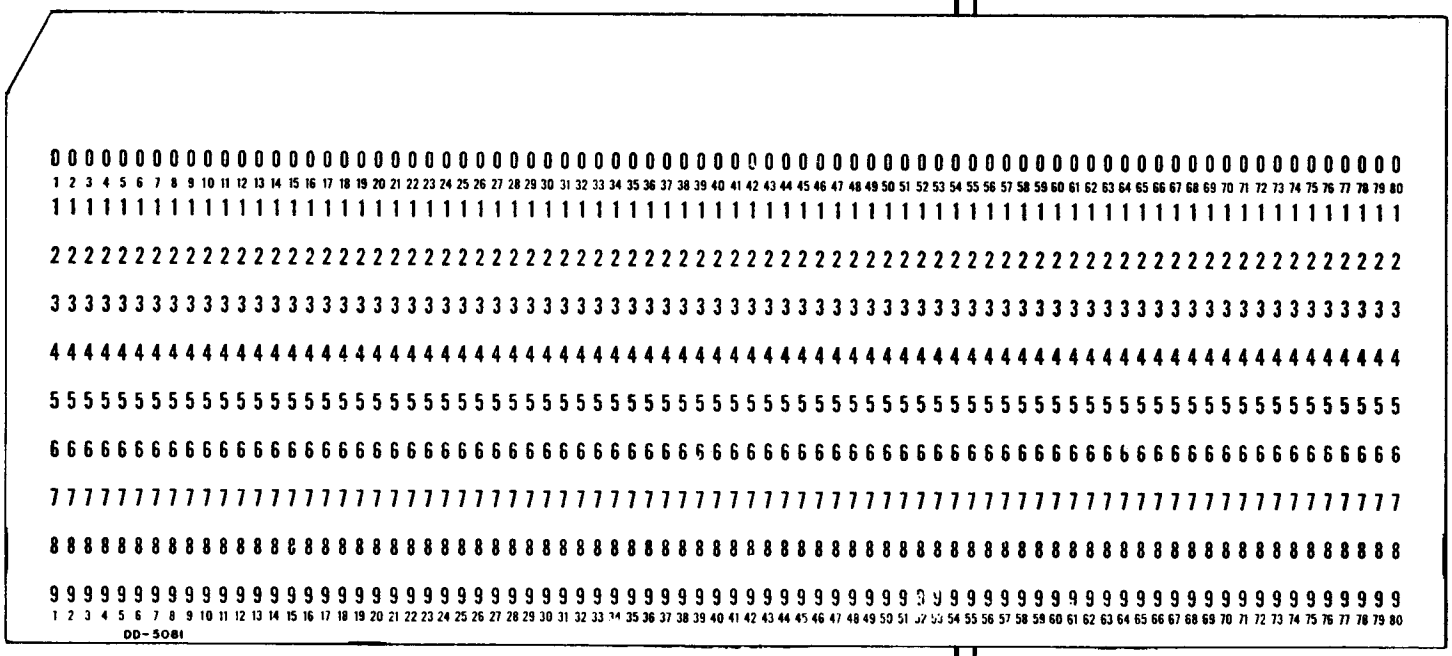
284.

If you have a machine, prepare a program card to Punch the following card format.

If you do not have a machine, show the punches for the program card below.

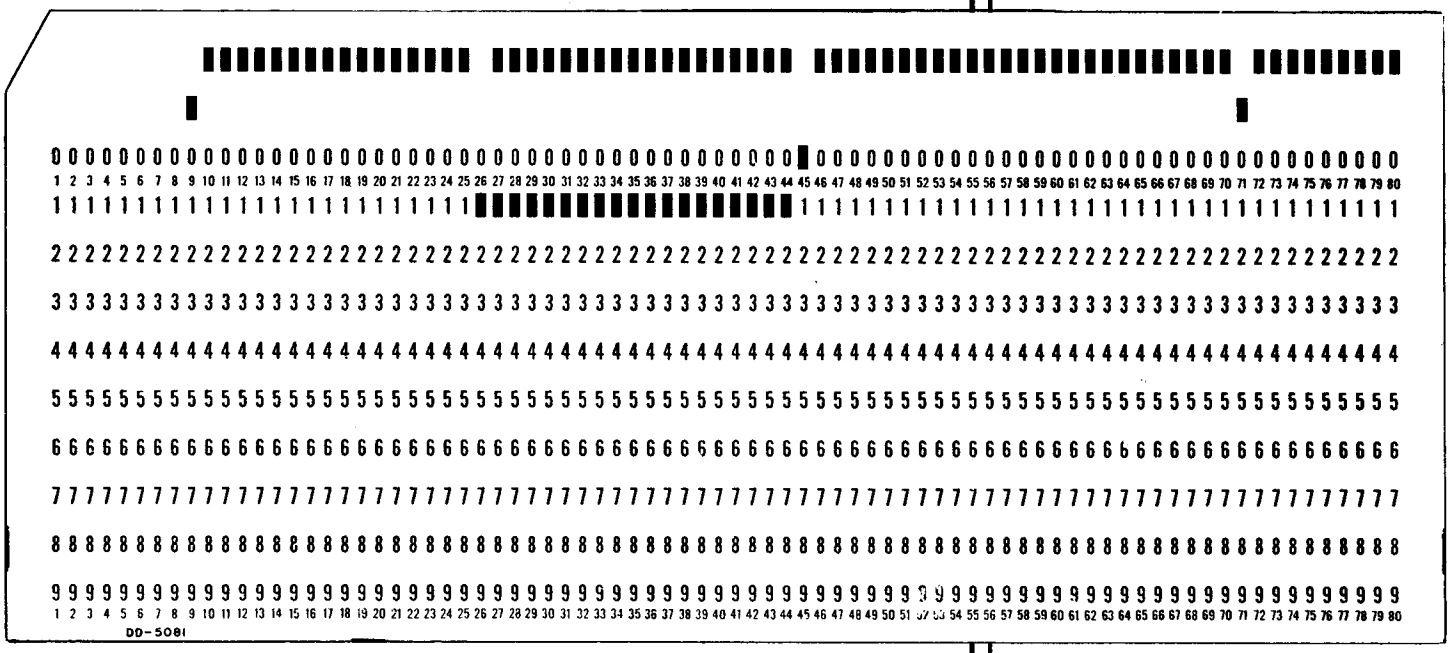
Program 1

Employee No.	(No coding necessary)	Cols. 1 - 8
Skip	Auto	Cols. 9 - 25
Name	Alpha (Alpha and Start Skip from Keyboard)	Cols. 26 - 42
Initials	Alpha	Cols. 43 - 44
Dup. City & State	Auto	Cols. 45 - 70
Skip	Auto	Cols. 71 - 80



ANSWER IN NEXT FRAME

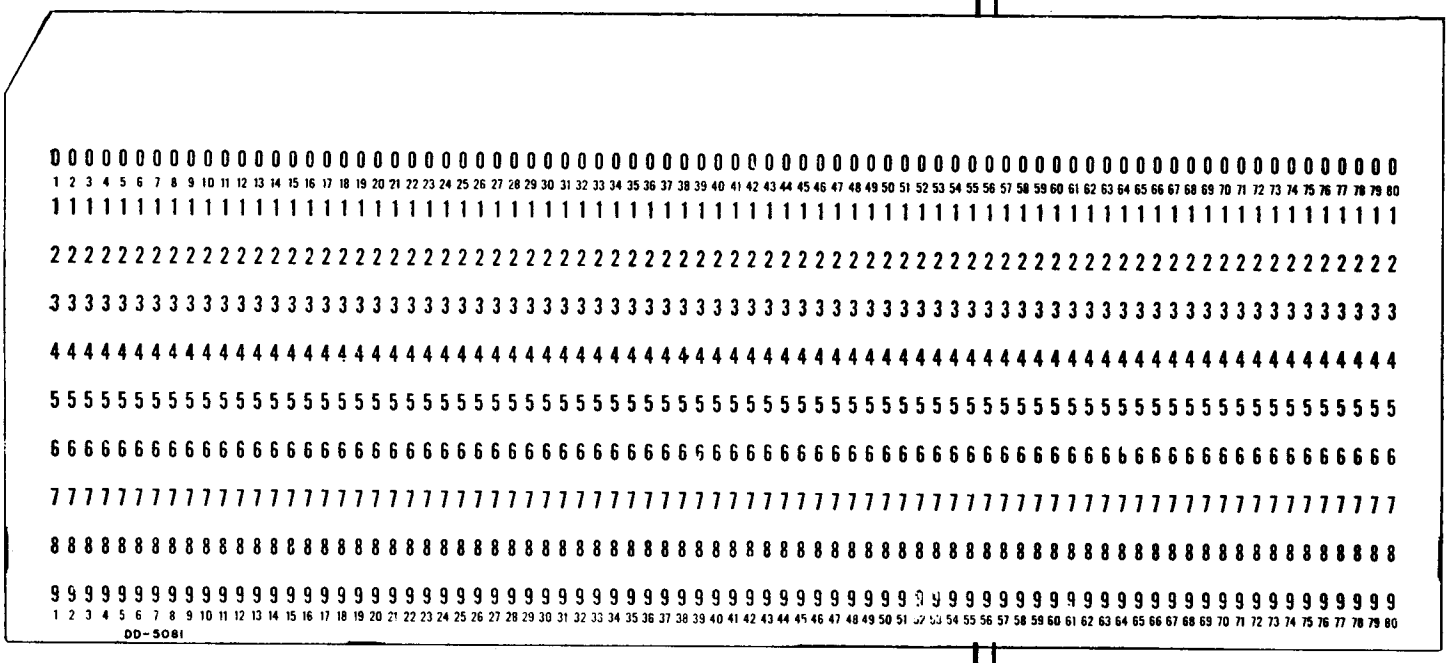
284. Answer



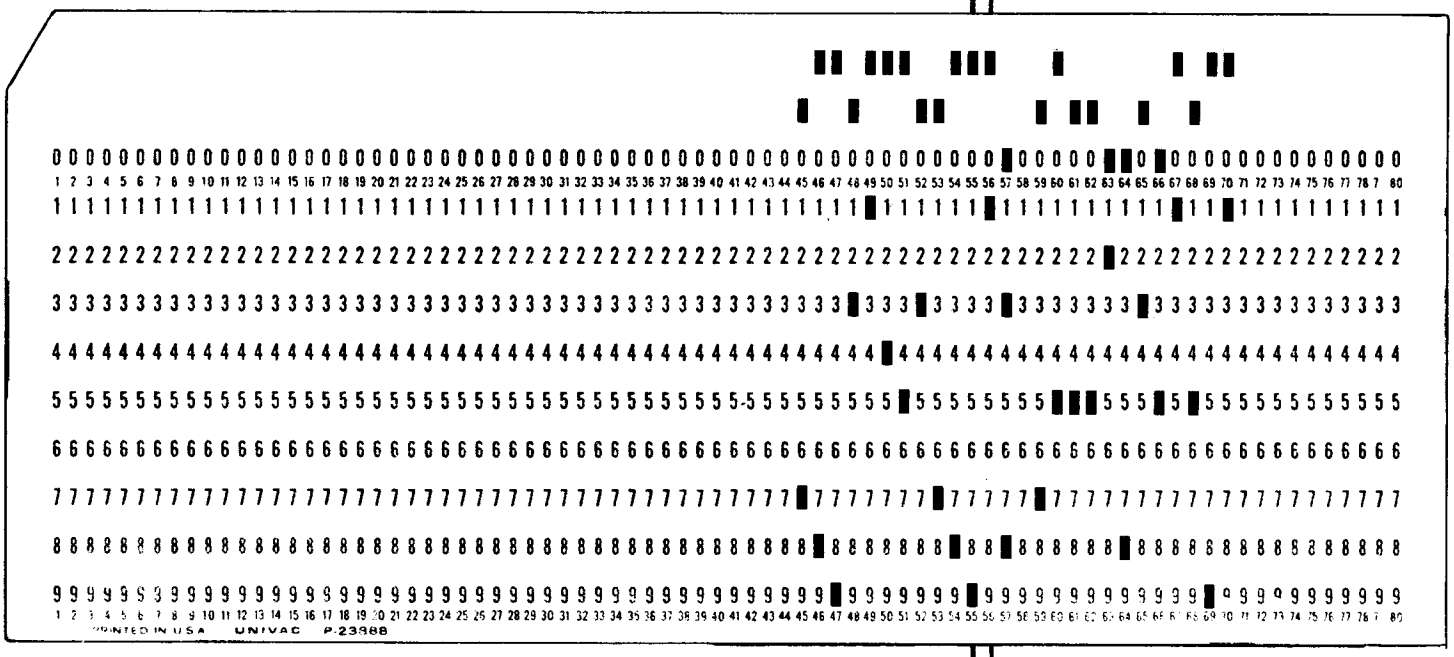
285.

Prepare a master data card with Philadelphia, Pennsylvania in columns 45 through 70.

ANSWER ON NEXT PAGE



285. Answer



286.

Enter the two cards which you just prepared into the VP or VIP. If you do not have a machine, describe the procedure for entering the cards.

1. Set to LOAD PROG.
2. Enter program card in Auxiliary Feed.
3. Hit FEED. Card is fed, read, stored and ejected to Select Stacker.
4. Set to LOAD DATA.
5. Enter data card into Auxiliary Feed.
6. Hit FEED.
7. Card is fed, read stored and ejected.
8. Turn LOAD switch OFF.
9. Set to AUTO.

287.

Now Punch cards for the following:

Cols. 1 - 8	Cols. 26 - 42
1. 36270532	Smith J. J.
2. 22428783	Jones W. S.
3. 51698989	Brown D. B.
4. 54460988	William B. P.
5. 72837891	Anderson M. L.

288.

Now Verify the cards you just Punched.
If there are any errors, correct them.

1. Enter program and data cards.
2. Place punched cards in Input Magazine.
3. Set to Verify.
4. Depress FEED.
5. Key in data.

289. The Verifying Interpreting Punch is basically identical to the _____ _____. The major difference is that the VIP in addition to Verifying and Punching will also _____.	Verifying Punch Interpret or Print
290. There are two ways that you can Interpret cards with your VIP. I_____may be accomplished while Punching or V_____is being done. From the Keyboard Chart, which switch do you think will control this?	Interpreting Verifying PRINT switch
291. The second method of Interpreting with the VIP is to load a deck of punched cards into the _____ _____ and depress the INTERPRET _____ key. The VIP will now continuously Interpret cards until the Input Magazine is empty, the _____ Stacker is full or the _____ key is depressed.	Input Magazine START Output STOP
292. What is the function of the PRINT Switch?	It causes Printing while Punching, Verifying or Interpreting.

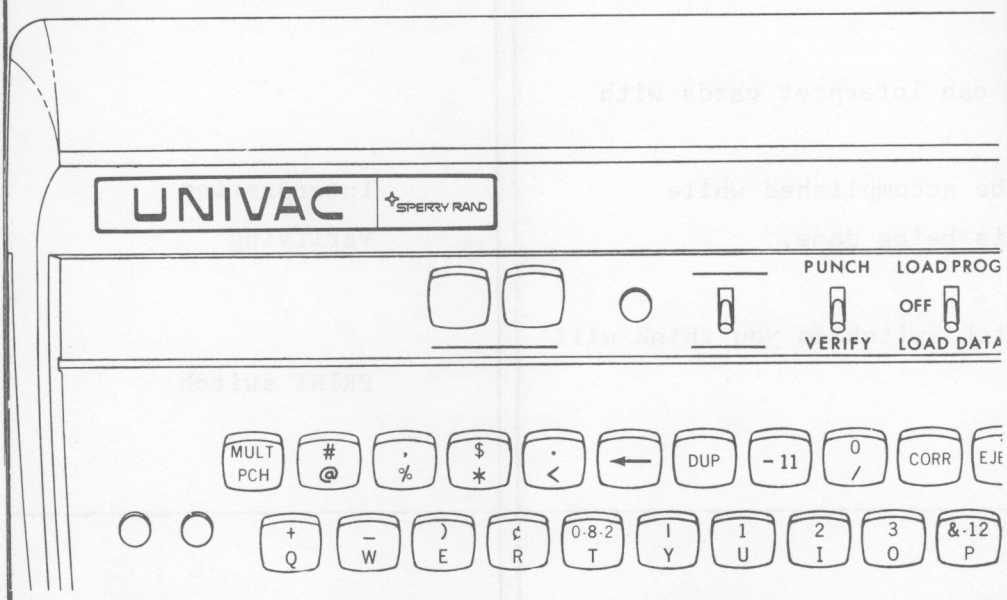
293.

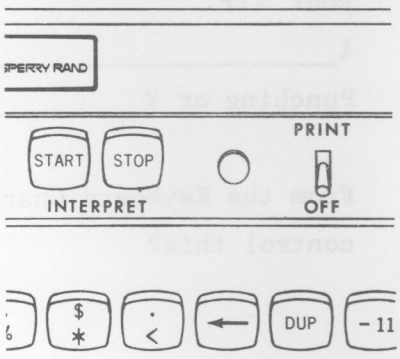
What is the function of the INTERPRET START and STOP buttons?

They initiate and end and Interpret run.

294.

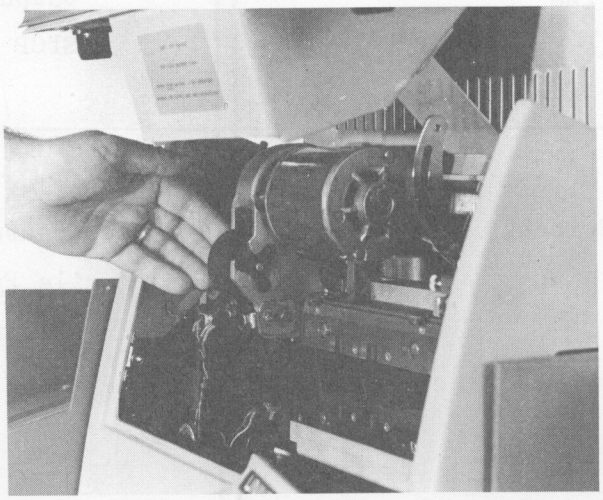
Label the blank keys.





295.

The VIP has an Inking Roll for Printing. It is indicated by a hand on the picture below.



It serves the same purpose as the _____ on a typewriter.

ribbon

296.

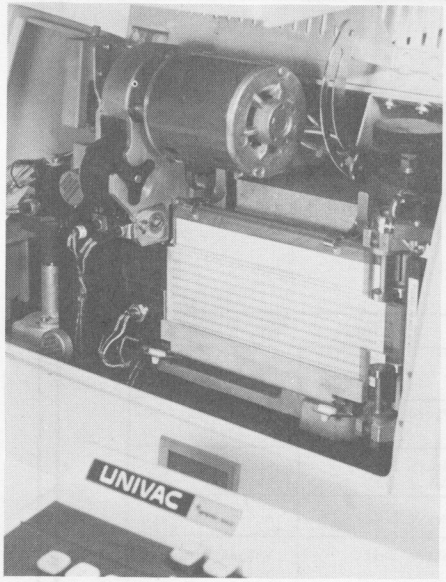
Like the ribbon on a typewriter, this wheel must be changed when it _____.

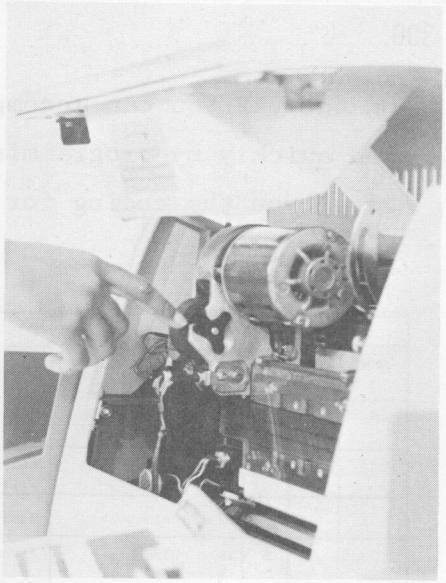
Changing this Roll is quickly done by the operator.

runs out of ink

297.

On the picture below is a triangular nut which holds the Inking Roll in place. Circle it.
Loosening the nut releases the shaft holding the Roll. The shaft may then be lifted out and the Roll will slide off.





298.

The Inking Roll should be replaced with a new one when _____.

it becomes dry and the printing is no longer dark enough

299.

One additional feature of the _____ is Early Feed capability. This means that the VIP can be programmed to initiate card _____ before the end of the card is reached. This increases the speed at which cards can be moved through the machine.

In the VP section of this course, you learned to accomplish this by programming a

- ☐ Shift
- ☐ Skip to the end of the card.
- ☐ Hop

VIP

Feeding

Skip

300.

On the VIP you can accomplish this more easily and quickly by programming Early Feed. The chart gives you the coding for this. What is it?

CODES		MODE AUTO OR MAN	WHERE PUNCHED In a PROGAM CARD FIELD	FUNCTION		
PROG 1	PROG 2			KEY PUNCHING	VERIFYING	INTERPRETING
12	4	A/M	Each column except first	Field Definition	Field Definition	Field Definition
11	5	A	First column only	Start Skip and Non-Print	Start Bypass Non-Print	Start Non-Print
0	6	A	First column only	Start Duplicate	Start Duplicate	Start Duplicate
1	7	A	Each column required	ALPHA Shift	ALPHA Shift	Not significant
2	8	A	First column only	Start Suppress Left Zero Print	Start Suppress Left Zero Print	Start Suppress Left Zero Print
2	8	A	Each column required except first	11/12 Print Elimination	11/12 Print Elimination	11/12 Print Elimination
3	9	A	First column following last column to be used	Start Early Feed	Start Bypass and Non-Print balance of card	Start Early Feed
11-2	5-3	A	First column only	Start Skip and Non-Print	Start Bypass and Suppress Leading Zeros	Start Non-Print
11-1	5-7	A/M	First column only	Start Right Justify	Start Right Justify	Not significant
12-11-1	4-5-7	A/M	Last column only	Stop Right Justify	Stop Right Justify	Field Definition

3 or 9 in first column followed by 12 or 4 in rest of columns

301.

The _____ _____ feature can be used when Punching, Interpreting or Verifying. From the Chart of Program Codes, what Punching is necessary in the program card for Early Feeding?

CODES		MODE AUTO OR MAN	WHERE PUNCHED In a PROGAM CARD FIELD	FUNCTION		
PROG 1	PROG 2			KEY PUNCHING	VERIFYING	INTERPRETING
12	4	A/M	Each column except first	Field Definition	Field Definition	Field Definition
11	5	A	First column only	Start Skip and Non-Print	Start Bypass Non-Print	Start Non-Print
0	6	A	First column only	Start Duplicate	Start Duplicate	Start Duplicate
1	7	A	Each column required	ALPHA Shift	ALPHA Shift	Not significant
2	8	A	First column only	Start Suppress Left Zero Print	Start Suppress Left Zero Print	Start Suppress Left Zero Print
2	8	A	Each column required except first	11/12 Print Elimination	11/12 Print Elimination	11/12 Print Elimination
3	9	A	First column following last column to be used	Start Early Feed	Start Bypass and Non-Print balance of card	Start Early Feed
11-2	5-3	A	First column only	Start Skip and Non-Print	Start Bypass and Suppress Leading Zeros	Start Non-Print
11-1	5-7	A/M	First column only	Start Right Justify	Start Right Justify	Not significant
12-11-1	4-5-7	A/M	Last column only	Stop Right Justify	Stop Right Justify	Field Definition

Early Feed

For Program 1, punch a 3 in the first column after the last column used. Punch a 12 in the remaining columns of the card. For Program 2, punch a 9 in the first column after the last column used. Punch a 4 in remaining columns of card.

302.

There are some other programming features available only on the VIP; find them on the chart.

Start Non-Print
Start Suppress Left Zero Print
11/12 Print Elimination

303. Start Non-Print tells the VIP not to Print a particular field. What coding is necessary to do this?	11 or 5 in the first column and 12 or 4-punches in the remainder of the field
304. The Suppress Left Zero Print instruction causes the VIP to not Print _____ on the left side of a field, even if they are Punched in the card. If 0008362 is Punched in the card, what will be Printed when programmed for Left Zero Suppression. What coding is necessary?	Zeros 8362 2 or 8 followed by 12's and 4's
305. 11/12 Print Elimination is self-explanatory. It eliminates the printing of ___'s and ___'s Punched in the card, which are used to indicate negative and positive values for a numeric field.	11's and 12's
306. Open the booklet which you found in the back of your PI book to the last page, and tear off at the perforation. Fill in the Questionnaire, and fold it so that the address shows, staple it together and mail it. When it is received at the UNIVAC Education Center, a certificate of completion will be sent to you.	

FINAL PROBLEM

Section 1

Prepare a program card to punch cards containing the information below.

You may use the tables and charts in the operator's information booklet.

Cols.	Data	Function
1 - 16	Name	Alpha and Manual Skip
17 - 18	Initials	Alpha (only)
19 - 24	Blank	Auto Skip
25 - 27	Type	Duplicate
28 - 32	No.	RJ
33	Blank	Auto Skip
34 - 48	Street	Alpha and Manual Skip
49 - 51	Blank	Auto Skip
52 - 80	City and State	Alpha and Manual Start Skip

If you skipped the section on how to program your machine, copy the program card on the next page and use it. Punch a data card with 338 in columns 25 - 26 - 27.

Section 2

Load your program and data cards, and without printing, punch the following cards.

Columns	1 - 16	17 - 18	25 - 27	28 - 32	34 - 48	52 - 80
	Taylor	RD	338	812	Main	Cleveland, Ohio
	Lewis	At	338	3362	South	Portland, Oregon
	Reed	GF	338	12	32nd	Wilmington, Delaware
	Gold	BG	338	774	Hastings	Dallas, Texas
	Hayes	EK	338	6968	Front	Orange, California
	Lacy	FD	338	5575	Front	Orange, California
	Brown	FD	338	12	University	Los Angeles, California
	King	SG	338	832	Dupont	Los Angeles, California
	Kelly	EH	338	236	Park	Newtown, Connecticut
	Lamb	MH	338	6410	Broad	Trenton, New Jersey

Section 3

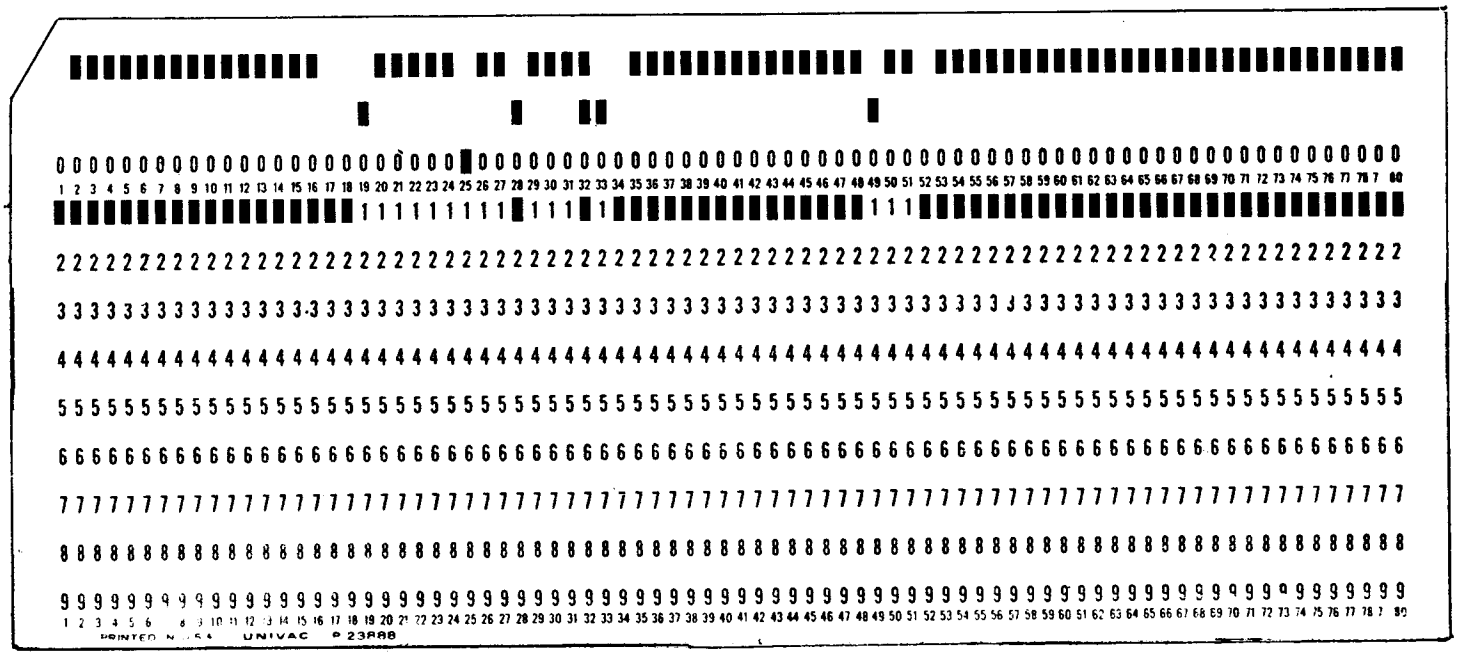
Check correctness by Verifying the cards without Printing. Use the program you made for Section 2.

Section 4

On the last card in the above problem, Verify it again this time changing the number 6410 to 6310 and remake the card.

Section 5

If you have a VIP, Interpret your cards now.



Section 6

Answer the following questions about the above problem.

1. Were you able to punch the program card correctly? Yes___ No___ Skipped ___

2. Were you able to make the data card? Yes___ No___

3. Were you able to load the program and data cards? Yes___ No___

4. Number of cards completely correct first time. Number___

5. Were you able to Verify the cards? Yes___ No___

6. Number of cards corrected while Verifying. Number___

7. Were you able to make the change in the last card? Yes___ No___

8. Were you able to Interpret the cards? (Indicate by checking Skipped if you have no Interpreter.) Yes___ No___ Skipped___

THIS MASK WILL HELP YOU USE THE PROGRAM

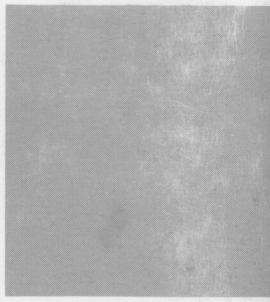
Place mask on page to cover the correct response at the right and to expose the first frame.

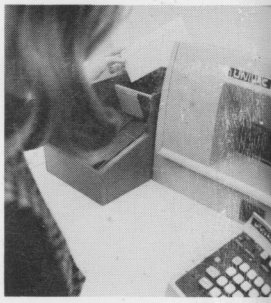
After you have written your response to the first frame, slide the mask down to uncover the response for that frame.

Continue with the following frames in a similiar manner.

REMEMBER

1. FIRST write your response.
2. THEN compare your answer to the correct response on the right.





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