

## DOCUMENT RESUME

ED 070 224

24

EC 050 268

AUTHOR Kafafian, Haig  
TITLE Study of Man-Machine Communications Systems for Disabled Persons (The Handicapped). Volume V. Final Report.

INSTITUTION Cybernetics Research Inst., Inc., Washington, D.C.  
SPONS AGENCY Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.

BUREAU NO BR-7-0533  
PUB DATE Jun 71  
GRANT OEG-2-7-070533-4237(607)  
NOTE 208p.

EDRS PRICE MF-\$0.65 HC-\$9.87  
DESCRIPTORS Cybernetics; Electromechanical Aids; \*Exceptional Child Education; \*Instructional Materials; Lesson Plans; \*Physically Handicapped; \*Teaching Guides; \*Typewriting

## ABSTRACT

Instructions are given for teaching severely physically and/or neurologically handicapped students to use the 14-key Cybertype man-machine communications system, an electric writing machine with a simplified keyboard to enable persons with limited motor ability or coordination to communicate in written form. Explained are the various possible configurations of Cybertype interfaces or keyboards, and the codes which identify the letters, symbols, and typewriter functions of the different keying positions. A set of 15 lessons for Cybertype instruction are presented, together with training exercises, tests, and supplementary instructional materials (practice exercises to augment the regular lesson plans). Typewriting exercises include practice in such activities as copying of commonly used words and sentences emphasizing certain letters, creative writing, language building, numbers and math symbols, and integrating letters, punctuation, and numerals. (See also EC 030 060, EC 050 266-050 267, EC 050 269-050 270.) (KW)

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# C/R/I Final Report

Project No. 18-2003 and 7-0533

Grant No. OEG2-7-070533-4237(607)

## STUDY OF MAN-MACHINE COMMUNICATIONS SYSTEMS FOR DISABLED PERSONS (THE HANDICAPPED)

VOLUME V

HAIG KAFAFIAN

CYBERNETICS RESEARCH INSTITUTE

2233 WISCONSIN AVENUE, N.W.  
WASHINGTON, D. C. 20007

June 19, 1971

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
OFFICE OF EDUCATION  
BUREAU OF EDUCATION FOR THE HANDICAPPED

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ED 070224

C/R/I

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HAIG KAFAFIAN

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Washington, D. C.

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C/R/I FINAL REPORT

Project No. 18-2003  
Grant No. OEG2-7-070533-4237

EXPERIMENTAL INSTRUCTIONAL MATERIALS  
FOR C/R/i FIELD CENTERS

Volume V

HAIG KAFAFIAN

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WASHINGTON, D. C.

Library of Congress Catalog Card Number 70-180731  
Printed in the United States of America

INSTRUCTION MANUAL FOR 14-KEY "CYBERTYPE"  
MAN-MACHINE COMMUNICATIONS SYSTEM

First Edition

This volume together with those listed below comprise the series of reports, demonstration guides, evaluative procedures, and instructional and training materials prepared under Project Nos. 7-0533 and 18-2003, Grant No. OEG 2-7-070533-4237 (607), for the Bureau of Education for the Handicapped, Office of Education, Department of Health, Education, and Welfare.

- C/R/I Interim Report, 1968 . . . . . Interim
- C/R/I Second Report, 1970 . . . . . Volumes I and II
- C/R/I Final Report, 1971 . . . . . Volume III
- C/R/I Demonstration Guide and Materials. . . . . Volume IV
- C/R/I Instruction Manual for 14-Key "Cybertype"  
Man-Machine Communications System . . . . . Volume V
- C/R/I Instruction Manual for 7-Key "Cybertype"  
Man-Machine Communications System . . . . . Volume VI
- C/R/I Instruction Manual for a "Cybertype"  
Tongue-Body Interface Man-Machine  
Communications System. . . . . Volume VII

A master errata sheet will be compiled from these volumes, and sent to their recipients. Your suggestions and help will make the experimental volumes more useful to researchers, teachers, and other readers, and will be of great value in preparing any revisions.

**PREFACE**

**INSTRUCTION MANUAL FOR**

**CYBERTYPE® MAN-MACHINE COMMUNICATIONS SYSTEM**

**14-KEY INTERFACES**

This first edition of the instruction manual for the 14-key "Cybertype" interfaces was designed as a guide for introducing the keying-codes and experimental teaching programs to researchers and teachers at the C/R/I Field Centers working with severely physically and/or neurologically handicapped students who have the cognitive resources to learn, who know the English alphabet, and who have comprehension of word formation and sentence structure.

The introductory section includes, among others, descriptions of various types and configurations of "Cybertype" interfaces or "keyboards" and codes which assign letters, symbols, and typewriter functions to the keying positions of the interfaces. Illustrations of keying positions, and the organization of lesson plans are presented.

Lesson plans for Cybertype® instruction and a set of Supplementary Instruction Materials are also part of this Instruction Manual. The teacher is encouraged to modify the contents in order to meet the students' requirements. The format is straightforward and can be followed in the event changes are made.

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C/R/I INSTRUCTION MANUAL FOR CYBERTYPE™  
COMMUNICATIONS SYSTEMS\*

INTRODUCTION

Physically handicapped children and children with neurological dysfunctions are often unable to provide the muscular coordination and dexterity necessary to communicate in written form, either by handwriting or by operating the 49 keys of an ordinary electric typewriter. These handicaps especially when accompanied by language impairments and specific learning disabilities, severely impede further development of intellectual and verbal potentialities. As a result, many multiply handicapped individuals, especially children who potentially have the intellectual competence to become self-sufficient contributing members of society, are institutionalized because their motor capabilities appear too limited for independent and practical functioning.

In spite of the apparent hopelessness of many children with multiple handicaps, it has been demonstrated that it is often possible to employ cybernetic systems which permit use of the individual's remaining motor capabilities.

Cybernetics Research Institute (C/R/I) is presently conducting

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\*This Instruction Manual is intended for research purposes only, and is not intended to represent the final version which is in the process of being developed.

1. Kafafian, Haig. Study of Man-Machine Communications Systems for the Handicapped. U.S. Office of Education, Bureau of Education for the Handicapped, Project No. 7-0533, C/R/I Interim Report, August 19, 1968.
2. Kafafian, Haig. Study of Man-Machine Communications Systems for the Handicapped. U.S. Office of Education, Bureau of Education for the Handicapped, Project No. 18-2003, C/R/I Second Report, February 19, 1970.

research for the purpose of studying severely disabled students' ability to communicate by means of the CYBERCOM™ family of man-machine systems. Children who have the cognitive ability but whose other disabilities preclude cursive writing or operation of ordinary typewriters are being studied through observation and testing. Where possible, man-machine systems are provided to the students with interfaces which match the students' remaining performance characteristics, thereby enabling them to operate electric writing machines and/or other communication and control systems.

The materials presented in the C/R/I Instruction Manual are also intended to serve the teacher of exceptional children as an introduction to a teaching guide for "Cybertype" man-machine communications systems, and provide them with an organized program of instruction for these systems together with appropriate training, testing and exercise materials. The C/R/I Manual is also intended for use as a guide in teaching children individually or in groups. Care should be taken in selections of the appropriate interface or "keyboard" and special instructional materials, if necessary. Substitute exercises and other special materials, if needed, should be determined by the teacher or researcher.

#### Description of Basic "Cybertype" Keyboards or Interfaces \*

The basic characteristics underlying the "Cybertype" system involve the concept of "dual-input". That is, instead of requiring operation of one key at a time to produce typed letters, symbols, or functions, as with an ordinary typewriter keyboard, the "Cybertype" systems operate from dual-inputs which may be bilaterally or unilaterally controlled.

Two inputs must be provided, that is, two keys (or one key which serves the purpose of two keys) are operated at one time, or they may be operated in sequence. Although dual-input operation may seem unusual at first, as compared to single-input operation, dual-input systems offer the advantages of simplified keyboard arrangement and flexibility permitting interface matching to the performance characteristics of the human operator. Another advantage, and an important one, is that the

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\*The term "interface" here refers to the keyboard or control mechanisms which are the point of contact between user and typewriter. In the case of an ordinary electric typewriter, the keys of the 49-key keyboard may be identified as the "interface". With a "Cybertype" system, which is for a typewriter or other office or computational machines, the 14-key, 7-key, or 2-key keyboards or single-key control, or other interface configurations constitute the interface.

keying code is easy to remember. With a little practice, the users do not have to refer to charts or marked keys once they have learned the code. Only two basic coding relationships are necessary to remember, e.g., 1 and 1 for the typewriter "space" function, 1 and 2 for the letter E, 1 and 3 for the letter T, 1 and 4 for the letter A, etc.

### Interface Configurations

One configuration of the 14-key "Cybertype" keyboard interface consists of 14 finger or prostheses-operated keys, arranged in two groups of 7 keys each, as shown in Figure 1. Typically, key-tops on this type of interface are 1/2 x 1/2 inch in size, with a lateral separation between keys of one inch center-to-center. For purposes of identification, keys are numbered from 1 to 7 in right and left hand banks (See Figure 1). This numerical identification of keys should be remembered, since it will be referred to frequently in this Manual. Some keyboard interfaces include an ON/OFF toggle switch and pilot light, as shown in Figure 1.

The 14-key keyboard is electrically connected to an electric typewriter which provides the printed output. Each letter, symbol or function to be produced is assigned to a pair of keys, one key in each of the two banks.

In this configuration of the dual-input interface, two keys are operated together using a finger of the right hand for the keys identified as the "Function Keys" or the right bank of keys, and a finger of the left hand for the left bank identified as the "Control Keys." It has been found that many students who lack the manual coordination and dexterity necessary to strike individual keys on the 49-key interface of an ordinary typewriter, can, with little difficulty, strike pairs of keys on the 14-key, dual-input interface, using one finger of each hand, prostheses, or other parts of the body when, larger keyboards are used. The small area to be covered, the minimum number of keys on the interface, the large key-tops and spacing of keys, the ease of learning the keying positions, and the minimum coordination required, bilaterally or unilaterally, are all factors which may contribute to the ease with which the "Cybertype" can be operated by individuals who are physically and/or neurologically disabled, but who have the cognitive and sensory capabilities.

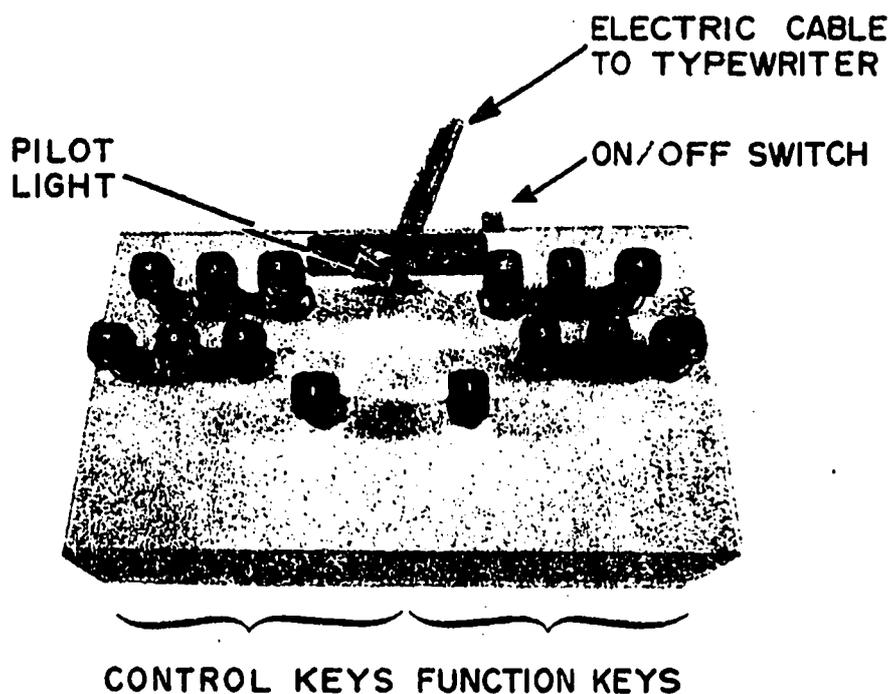
### Interface Coding

The code assigning letters to pairs of keys of most of the interfaces is based on the frequencies of letter usage in the English language. Although various studies have revealed slight differences in letter frequencies, the "Cybertype" code described in this Manual is based on the following order of letters from most frequent to least frequent:

ETAONIRSHDCLMUFPHYBGWVJKQZX<sup>10</sup>

Figure 1

"Cybertype," 14-Key, Dual-Input  
Interface for Finger Operation



For a right hand dominant individual, each of the six most frequently used letters (E-T-A-O-N-I) and the typewriter "space" function can be produced by activating one key on each side of the keyboard. As shown in Figure 2, these letters and functions are produced by activating Key No. 1 of the left bank of keys, combined with individual keys of the right bank. For identification and descriptive purposes as noted earlier, the seven keys on the left side of the interface are referred to as "Control Keys" and the seven keys of the right group are referred to as "Function Keys" (Figure 1).

The other letters and the "period" are assigned to the second, third, and fourth control keys on the left side of the interface, paired with "Function Keys" of the right-hand bank (Figure 2). Numerals, other symbols and typewriter functions are assigned to "Control Keys" 5, 6, and 7 (see Figure 3).

The assignment of certain typewriter symbols, such as "!" and "+" depends on the model of typewriter used with the "Cybertype." The code for numerals, symbols, and functions shown in Figure 3 applies to the IBM\* "Selectric" typewriter with "Prestige Elite," "Courier," "Letter Gothic," or "Delegate" type styles. The code for the IBM Models C and D differ slightly.

Through the use of a "code-reversal junction box," which connects the interface(s) to a "cybertypewriter," the key assignments for left and right-hand key groups can be interchanged, for operation by a left-hand dominant individual.

This Instruction Manual is meant for right-hand dominant individuals, and the "Control Keys" on the left side of the interface and "Function Keys" on the right side should be "reversed" if the students are left-handed. Thus, for a left-hand dominant student, the teacher may use the "code-reversal junction box" in place of the usual junction box, thereby shifting the "Control Key" positions to the right side and the "Function Keys" to the left side of the "Cybertype" keyboard. It is important to note that no data is available at this time to support this reversal and teachers may be guided accordingly.

#### Other Interface Configurations

Interface configurations other than the 14-key, finger-operated keyboards are employed where they more effectively match the remaining performance capabilities of the individual. For example, many persons lack

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\*Trademark - International Business Machines Corporation, Armonk, N. Y.

Figure 2

Keying Positions for Letters,  
Typewriter Space, and Period  
with the "Cybertype," 14-Key Interface

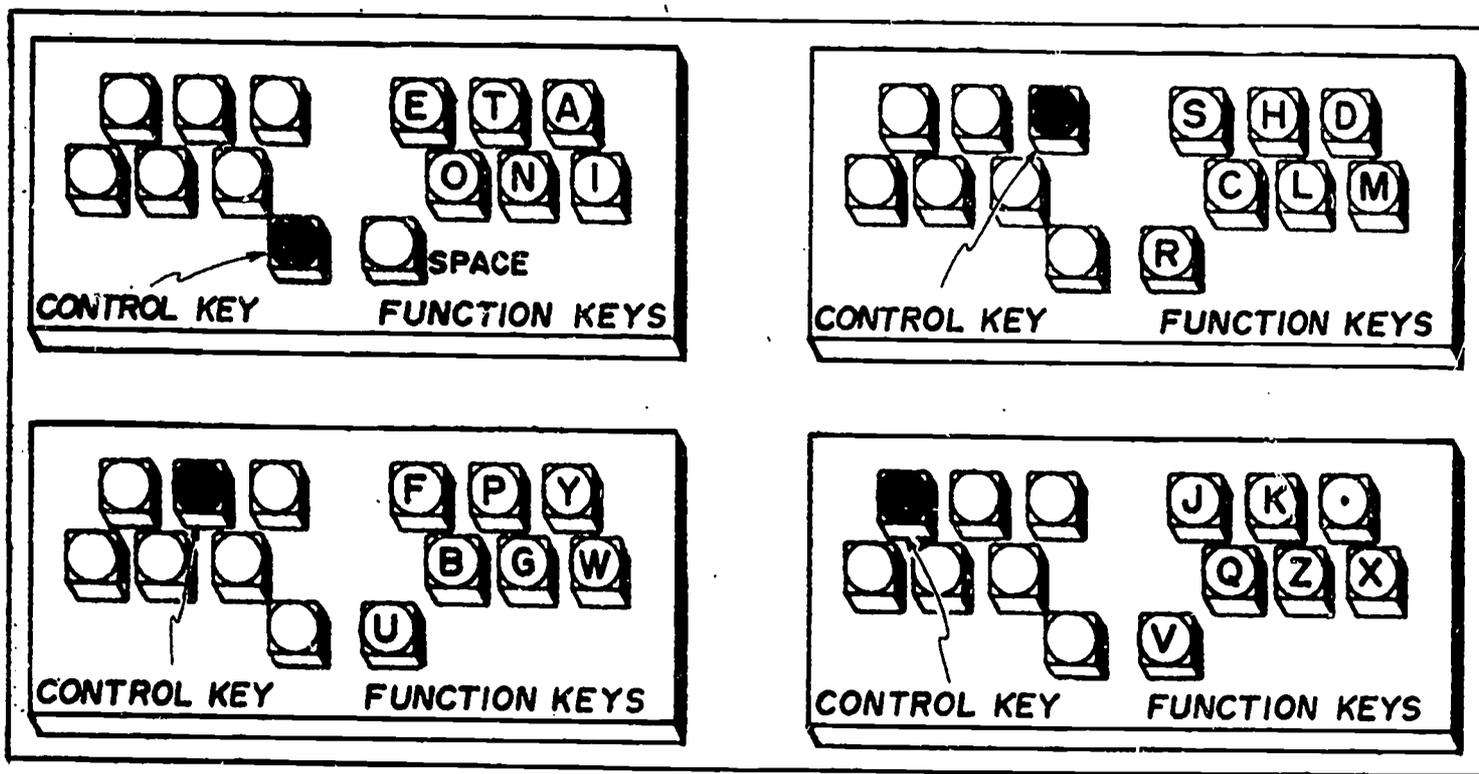
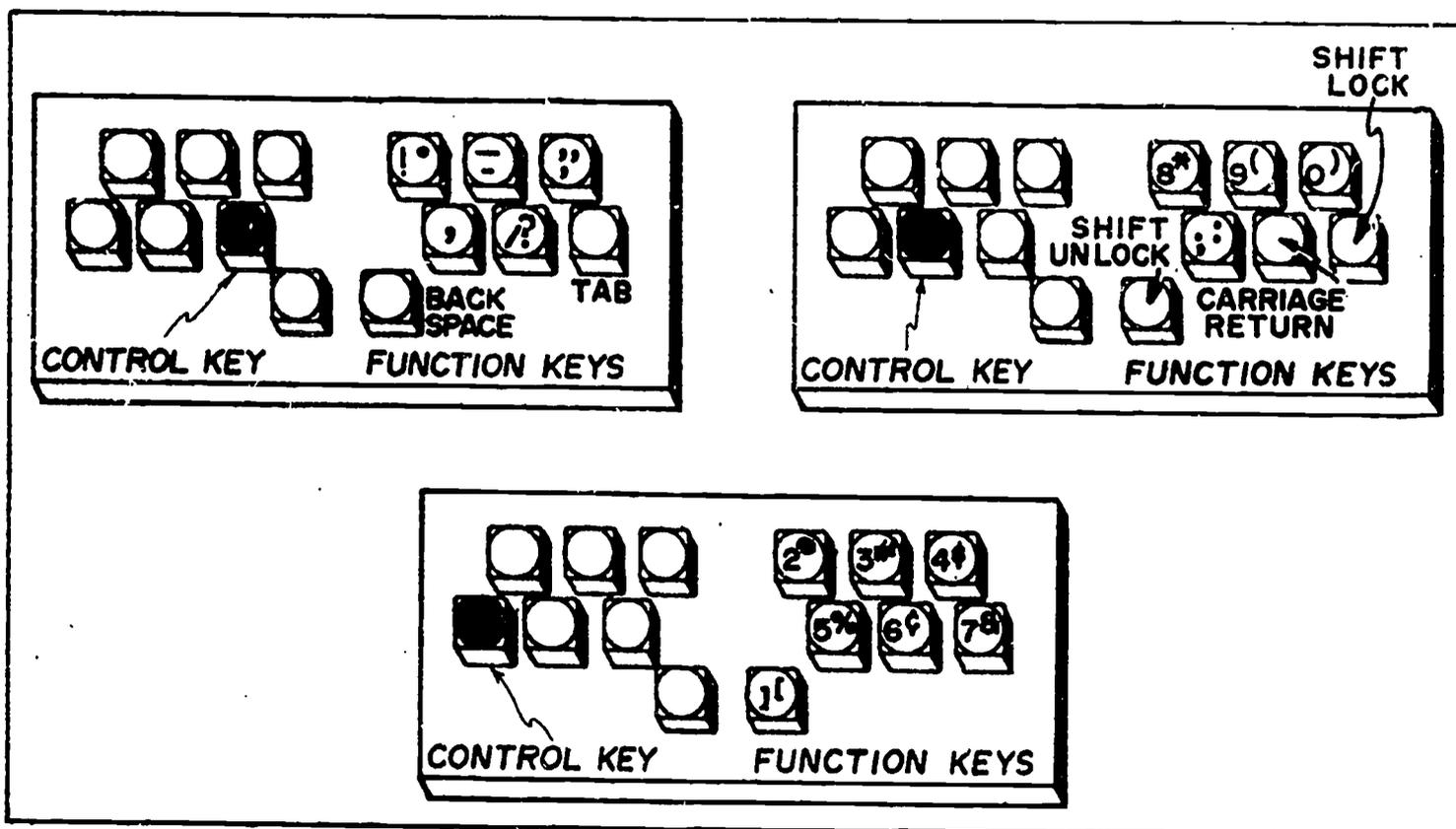


Figure 3

Keying Positions for Numbers,  
Symbols, and Typewriter Functions  
with the "Cybertype," 14-Key Interface



the coordination and dexterity necessary to operate keys with their fingers, but retain some control to provide gross motor coordination in hands and arms. They may be provided with "fist-controlled" interfaces, one configuration of which consists of 14 large keys with wide spacing, and key-tops with a diameter of one inch and a lateral separation between keys (center-to-center) of two and a quarter inches (see Figure 4). This configuration can be operated with the parts of the upper limbs, e g., thumbs, fingers, fists, or heels of the hands.

Another type of interface, the "foot-keyboard," consists of key-tops with a diameter of one and a half inches, and a center-to-center lateral separation of three inches (Figure 5). These interfaces can be operated with the fists, heels of the hands, or other parts of the body by persons whose manual coordination is not sufficient for the smaller fist keyboard. In addition, they can be operated with the feet by individuals with virtually no ability to coordinate arm movements, or by upper-limb amputees. For foot-operation, the interface is placed in an appropriate position, either on the floor or a stand, with the user seated in a chair adjusted to the proper height so that the weight of the legs is supported by the edge of the seat, and feet "float" just at the level of the key-tops. In this position, keys can be actuated by simple toe depressions.

Since the configuration or spatial arrangement of keys in these interfaces is similar to that shown in Figure 1, the letter-keying code is as shown in Figures 2 and 3.

### The Cybertype Unilateral Keyboards

Individuals who are unable to provide controlled bilateral coordination in arms, legs, or other parts of the body, employ the dual-input sequential interfaces, which consist of seven typing "Function Keys" and a "reset" or "correction" key. These interfaces require the use of only one part of the body, such as the tongue, a single limb, or other portion of the body which can be controlled.

The 7-key keyboards, two versions of which are shown in Figure 6, may be operated by actuating two keys, constituting a pair, sequentially. The first key depressed may be considered to correspond to the left bank or the "Control Key" side of a 14-key interface, and the second key depressed to the right bank or "Function Key" side of a 14-key interface. Thus, striking Key No. 1 followed by Key No. 2 will produce the letter "E." As with a 14-key interface, there are 7 x 7 or 49 possible pairs of dual-inputs which allow production of all the characters and functions available on the typewriters used. See Figure 6.

Figure 4  
"Cybertype," Dual-Input Interface for  
Fist or Hand Operation

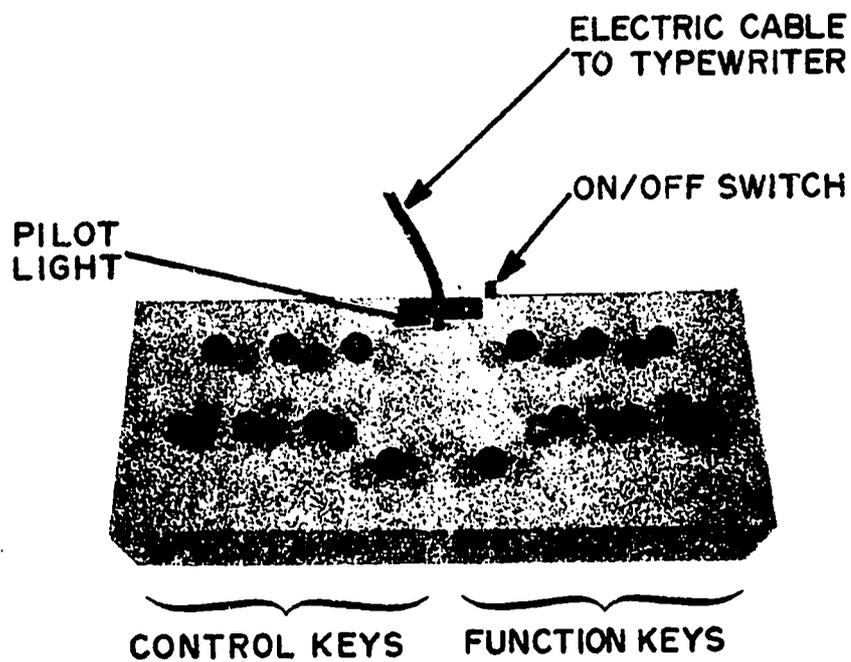


Figure 5

"Cybertype," Dual-Input Interface for  
Fist or Foot Operation

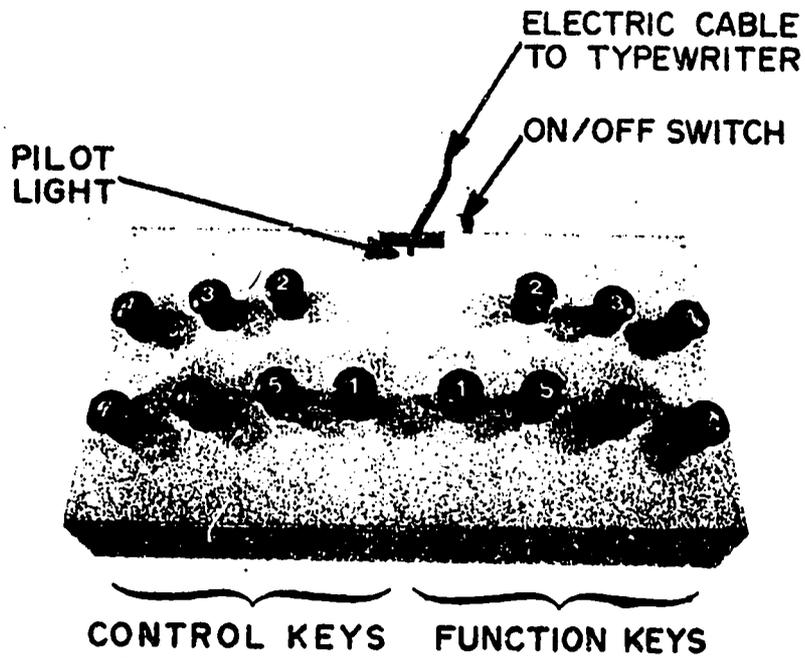
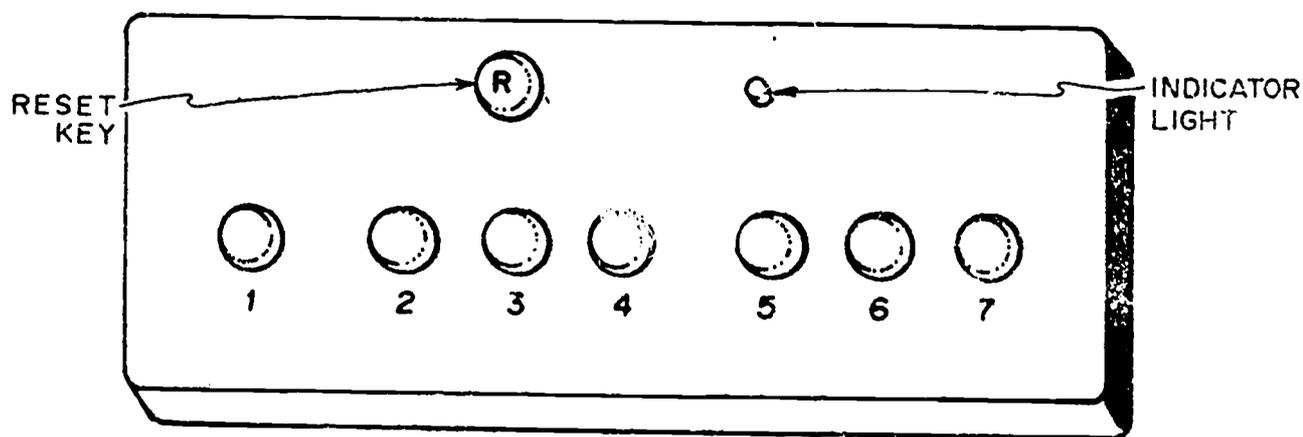
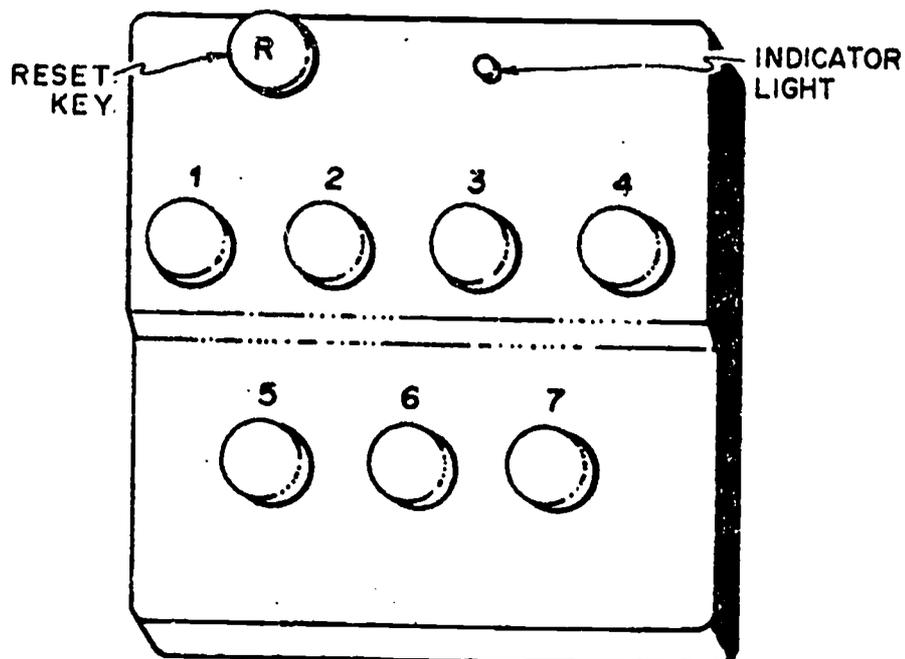


Figure 6

"Cybertype," Dual-Input Sequential Interface  
for Operation with a Single Limb



a) Dual-Input Sequential Interface: Single Row



b) Dual-Input Sequential Interface: Double Row

Figure 7

Letter-Keyping Code for 7-Key, Dual-Sequential Interface

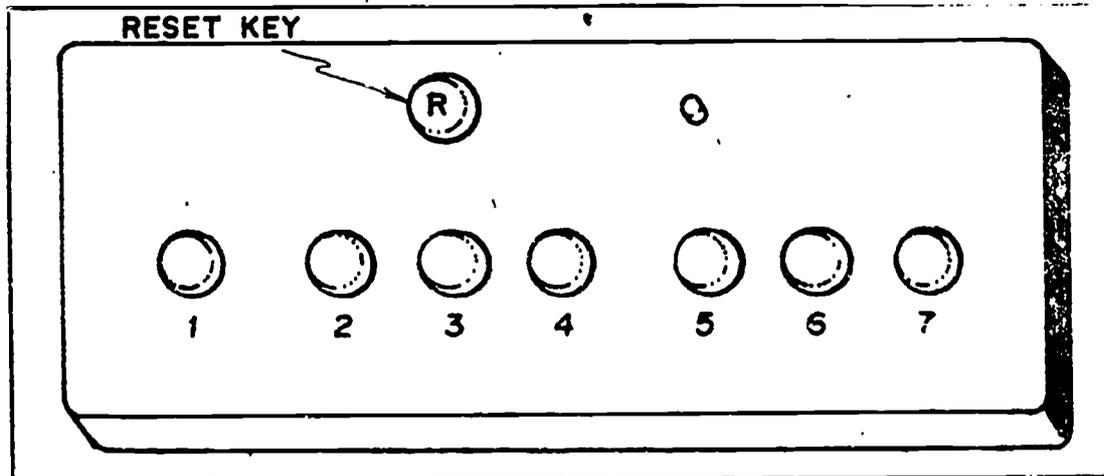


Diagram of 7-Key, Dual-Sequential Interface

Typewriter Functions		Dual-Sequential Keying Code
LC*	UC**	First and Second Key Nos.
	Space	1, 1
e	E	1, 2
t	T	1, 3
a	A	1, 4
o	O	1, 5
n	N	1, 6
i	I	1, 7
r	R	2, 1
s	S	2, 2
h	H	2, 3
d	D	2, 4
c	C	2, 5
l	L	2, 6
m	M	2, 7

\* Lower Case

\*\*Upper Case

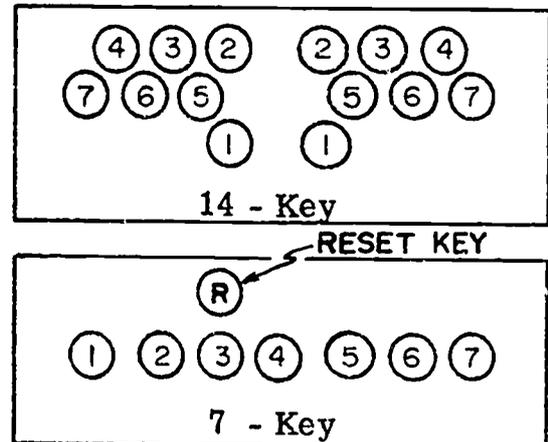
Typewriter Functions		Dual-Sequential Keying Code
LC*	UC**	First and Second Key Nos.
u	U	3, 1
f	F	3, 2
p	P	3, 3
y	Y	3, 4
b	B	3, 5
g	G	3, 6
w	W	3, 7
v	V	4, 1
j	J	4, 2
k	K	4, 3
.	.	4, 4
q	Q	4, 5
z	Z	4, 6
x	X	4, 7
Back		
Space		5, 1
!	°	5, 2
-		5, 3
'	"	5, 4
,	,	5, 5
/	?	5, 6
Tab		
Function		5, 7
LC* ("Shift		
Unlock")		6, 1
8	*	6, 2
9	(	6, 3
0	)	6, 4
;	:	6, 5
Carriage		
Return		6, 6
UC* ("Shift		
Lock")		6, 7

\* Lower Case  
 \*\* Upper Case

Typewriter Functions		Dual-Sequential Keying Code
LC*	UC**	First and Second Key Nos.
1	]	7, 1
2	@	7, 2
3	#	7, 3
4	\$	7, 4
5	%	7, 5
6	¢	7, 6
7	&	7, 7

\* Lower Case

\*\*Upper Case



Outline showing key-identifications 7 and 14-Key Keyboards

If the incorrect "Control Key" is depressed inadvertently, the "reset key," which is located near the rear edge of the interface as shown in Figure 6, may be struck in order to clear the system immediately. After the "reset key" is depressed, the correct first key of the key-pair can be actuated, followed by the keying of the second key of the key-pair assigned to the desired letter. If there is an error on the first key struck, "automatic correction" may be achieved without use of the "reset key." All that is required is that the user wait until the red "indicator light" located on the keyboard goes out.

The red "indicator light" (shown in Figure 6) is always illuminated upon initial striking of the first key of each key-pair keying combination. When the second key of the key-pair is actuated, the typed response or typewriter function occurs and the "indicator light" goes out by itself.

The letter-keying code for the 7-key, dual-sequential interface is equivalent to that for the 14-key systems, and is shown in Figure 7. The 7-key interface configurations offer considerable flexibility and can be operated not only with a fist, foot, or tongue, but also with a "unicorn," a helmet-mounted stick, or "mouth stick." The interface shown in Figure 6b (4 keys in the upper row, 3 keys in the lower row) consists of somewhat larger key-tops and is suitable for operation by persons who have limited control.

The styles and types of keyboards or interface configurations for use

with the "Cybertype" writing machines are almost unlimited. Variations of muscle and body-controlled transducers or keyboards operable from signals generated by the central nervous system, tongue-controlled keyboard, "joy-stick," glove, and lever-actuated switches, together with numerous other interface configurations operable with the aid of prostheses or orthoses can be selected to match the remaining motor capabilities of the disabled person.

### Organization of Lesson Plans

This Instruction Manual is organized into 15 lessons. Each lesson should generally last about one hour, and one lesson should be given each day, four or five days a week. This is based on the experience of teachers who have had a high degree of success with their students, all of whom have been children with multiple impairments.

When working with a group of students, a prerequisite is that the teacher, with the aid of each student, select the appropriate interface out of the set of interfaces provided with the system. If only one writing machine in the classroom is available, all of the students' and the teachers interfaces may be connected to it, as shown in Figure 8. Children may be introduced as a group or individually to the teacher's demonstration of the keying positions of the appropriate keyboard or interface. They should practice operating the interface selected for their use following the procedures enacted by the teacher.

During these group practice sessions, those interfaces which are not used to operate the "Cybertypewriter" are either disconnected from the junction box or if equipped with switches, they are turned off. Each student can then be given individual attention in practicing the exercises which accompany each lesson, with or without activating the "Cybertypewriter." At individual practice sessions the student's interface switch is connected to the junction box or turned "on," so that the desired exercises are typed.

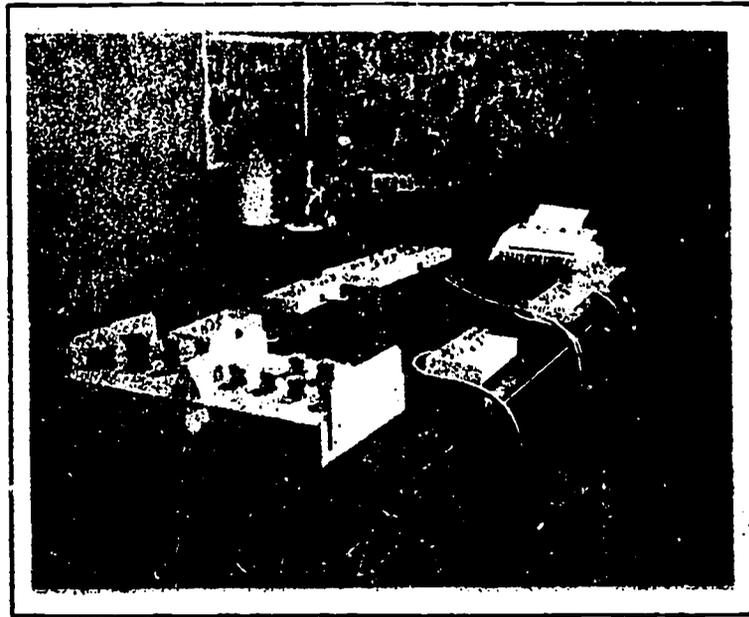
In the meantime, other students whose interfaces are turned "off" are not precluded from practicing; they may practice their exercises by "keying" their interfaces, even though no typewritten output is obtained. Ordinarily, more than one "Cybertype" should be in the classroom, and the teacher can observe each member of the group and obtain typewritten copy for each student in the group by looking at the monitor "Cybertype."

### Cyber-Circus Story

The Appendices to this Manual include a "mnemonic" or memorization aid called the "Cyber-Circus Story." The characters and events in this story are related to letters and symbols and to their "Cybertype" keying positions.

Figure 8

A Variety of "Cybertype" Interfaces  
Connected to a Single Electric  
Typewriter for Group Instruction



This story has power to be a valuable aid to memorization with the subjects tested. It appears to develop enthusiasm and increase the student's motivation in learning to use the "Cybertype" and perform more effectively in their other activities. The story is compatible with the lesson plans in this text.

### Supplementary Materials

The Appendices include a "Supplementary Materials" section which provides practice exercises to be used in augmenting the exercises included with each lesson. The teacher may review the Supplementary Materials section and select appropriate exercises which would serve as additions to the regular lesson plans.

It is recognized that students' age levels, cognitive, motor, and sensory capabilities contribute toward their rate of progress. The teacher is encouraged to constantly consider these factors and employ a teaching plan which will have the greatest probability of being effective for a particular student or group of students. It should be remembered that all of the experimental instruction materials were developed for a research study and evaluation program, whose principal objective was to determine the feasibility of the "CYBERCOM" man-machine communications systems.

LESSON PLANS  
FOR THE  
14 - KEY (DUAL-CONCURRENT) INTERFACE

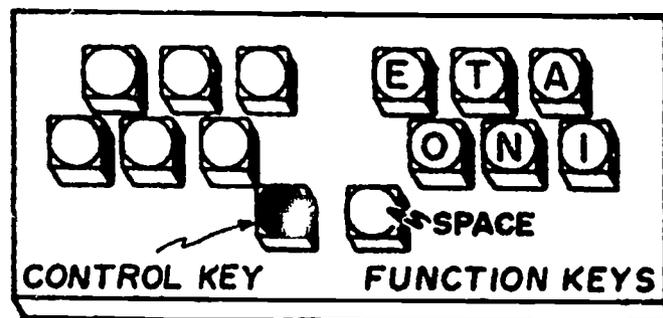
<u>Lesson No.</u>	<u>Page</u>
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LESSON 1

Before teaching students any of the "Cybertype" letter-keying "associations," introduce them to the electric writing machine by explaining how it operates. One way to simplify this task is to demonstrate the similarity of keys on the keyboard to electric light switches. For example, you may point out and explain that when one of the light switches is turned on, somewhere in the room a light "comes on." Similarly, when keys of a keyboard are depressed, letters or symbols to be typed appear.

Teachers are urged to review the C/R/I Second Report\* for details and descriptions of other "Cybertype" instructional programs.

The functions to be introduced in this first lesson are: "Space," E, O, T, N, A, I. Note that Control Key No. 1 for the left hand is used to produce these characters.



Students should be shown the locations of these seven functions (in the order presented above), and should be given time to copy the "Dexterity Exercises" found on the student practice sheet (page 21). The practice exercises are provided on separate pages for your convenience.

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\*Available from the Librarian, Cybernetics Research Institute, 2233 Wisconsin Avenue, N. W., Washington, D. C., 20007.

If desired, these pages can be reproduced and presented to students for copying. If you are working with a group of children, copies of these exercise sheets should be provided for each student.

The "Dexterity Exercises" are designed to give students practice necessary in learning which keys produce which letters. Since repetition is essential in learning the letter-keying associations, each student should practice the exercises until she or he has thoroughly memorized the code for letters presented in the lesson.

After memorization, proceed to the "Practice Sentences" in Part 2 of the exercise sheet, and have each child type each sentence in the order shown. This part of the lesson gives students a chance to learn how their keyboards can be used to produce printed words in the context of meaningful sentences.

Note that the exercises in this lesson are presented in capital letters. Therefore, it is advisable to engage the typewriter in the "upper case" (Shift Lock) position so that the letters produced by students will resemble those on their exercise sheets. In a later lesson (Lesson 6), students are introduced to the keying codes for shifting between upper and lower cases.

For students who have not learned how to operate the typewriter "Carriage Return" function, you should do this for them, when necessary, by operating together the middle keys (No. 6) in the lower rows on both sides of the interface (see Figure 3, page 7).

LESSON 1

1. Dexterity Exercises

EEE	OOO	TTT	NNN	AAA	III
AAA	III	TTT	NNN	EEE	OOO
EO	EO	OT	TN	AT	TI
IAN	TOA	EOT	NAI	ONO	ITO

2. Practice Sentences

EAT ONE  
I ATE ONE  
ANN ATE NINE  
TEA AT NOON  
IN A TENT  
TEA AT TEN  
I ATE AN ONION

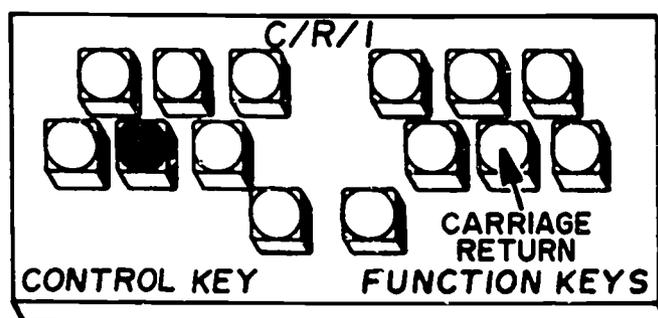
## LESSON 2

This lesson is a review of the typing functions learned in the first lesson: "Space," E, O, T, N, A, I. It is important for students to master the keying positions for these functions before proceeding further.

Have students copy the words and phrases provided at the top of the exercise sheet for this lesson. This practice should reveal the extent to which children have remembered functions learned in the previous lesson. If additional practice is necessary, use the exercises for Lesson 1, then return to the "Copy Words and Phrases" for this lesson.

The questions in Parts 2 and 3 on the exercise sheet are designed to stimulate the children's imagination. Students should answer these questions in their own words and to the best of their ability. However, at this early stage, it may be necessary for you to provide some "coaching" or suggestions for these creative exercises.

At this time, introduce the carriage return function to the students.



Demonstrate the keying position for this function and, if necessary, explain the purpose of the carriage return. The carriage return function may be explained to young children as "the mechanism on the typewriter that rolls the paper to a new clean line so that you can continue typing."

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**Have students practice the carriage return keying position a few times, and thereafter have them use it appropriately when they wish to type a new line of print on the paper.**

LESSON 2

1. Copy Words and Phrases

OAT	ONE TOE
NONE	TEN ATE
EATEN	TEA TOO
TON	IN AN INN
AN ANT	EAT AN ONION
NOT ONE	NOON TO ONE

2. What numbers can you spell using only the letters E-O-T-N-A-I? Type them.

3. How many words can you make using only the letters E-O-T-N-A-I? Type them. (You may use the same letter more than once in a word.)

### LESSON 3

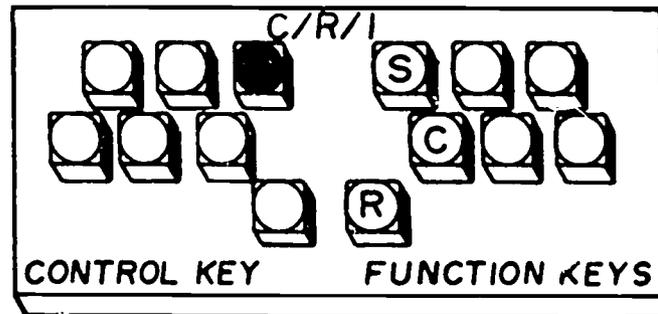
The first "Training Exercise Test" (Training Exercise No. 1 on page 27) should be administered at the beginning of this lesson. It is best to precede the test with a brief review of "Space, E, O, T, N, A, I."

This training exercise must be timed with a stopwatch and be administered according to the following procedure. Each child should be given the exercise individually in a quiet room without distracting noises or movements. It is suggested that the teacher should not use the word "test" in describing these "Training Exercises."

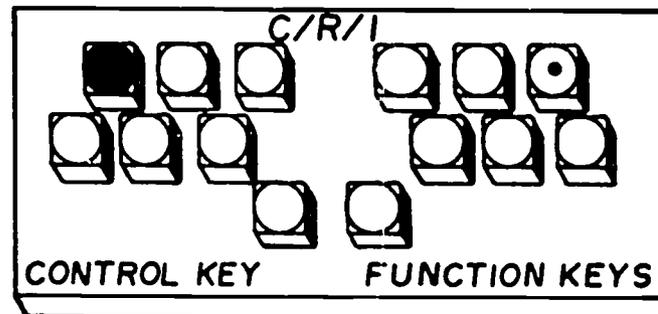
Use your own judgment in wording the instructions for these tests, but give the child directions approximately as follows: "Today, you are going to receive a special exercise so that you too can find out how well you are doing." --- (Place exercise sheet in front of child.) --- "Type the three sentences on this page as fast as you can, but concentrate and try to make a perfect copy."

Let the child see your stopwatch and explain that you want to find out how much time is taken in completing the exercise. Give the child a signal to start, and at the end of one minute, record on the "Scoring Sheet" the letter and word being typed, but do not interrupt the student at this point. Allow the child to continue typing all three sentences in the test and record the total time required to complete the exercise. Let the student know the amount of time recorded by the stopwatch.

Present the new material in this lesson once the test is completed. The functions to be introduced in this lesson are: R, S, C, . (period). Students should first be shown the keying locations of R, S, and C, and be given time to copy the "Dexterity Exercises" found on the exercise sheet on page 29.



After students have completed these exercises, indicate the use and keying locations for the period. Since the period function of the 14-key keyboard requires a different Control Key than the functions R, S, and C, it should be introduced separately. Students will then be prepared to proceed with the "Dexterity Exercises" which include periods, as well as the "Practice Sentences."



TRAINING EXERCISE NO. 1

TEN IN A NET

AT A TONE

NO ONE ATE IT

**TRAINING EXERCISE TEST**

**Scoring Sheet**

**Student's Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Training Exercise Test No.** \_\_\_\_\_

**1. Location in Cybertyping at end of first minute:**

**Letter** \_\_\_\_\_, **Word** \_\_\_\_\_

**2. Total time for completion** \_\_\_\_\_

**Note: Attach student's paper to this form and return to C/R/I**

LESSON 3

1. Dexterity Exercises

RRR    SSS    CCC

CCC    SSS    RRR

RS    RC    SC    SR    CR    CS

RSC    SRC    SCR    CSR    CRS    RCS

...    ...

R.    S.    C.

.C    .R    .S

.RCS.    ...

2. Practice Sentences

NAN RAN.

ONE CAR IS TAN.

ETTA SITS.

SCOT RACES.

TEN ATE ON A CART.

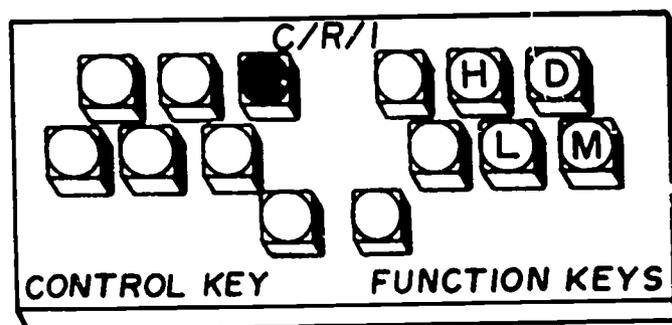
IT SCARES RON.

I CARE.

#### LESSON 4

In this lesson, students will be taught the remaining four functions of Control Key No. 2. These letters, along with those the students have already learned, will enable them to produce a sizeable word vocabulary.

The letters to be introduced are: H, L, D, M.



Present the key locations for the new letters in the order indicated above. Then have students complete the "Dexterity Exercises" involving these new functions.

Emphasize the fact that Control Key No. 2 for the left hand can produce all seven letters (R, S, C, H, L, D, M). When the children demonstrate that they have learned the keying positions for H, L, D, and M, have them proceed to the "Practice Sentences" in Part 2 of the exercise sheet.

LESSON 4

1. Dexterity Exercises

HHH    LLL    DDD    MMM  
HLH    LHL    DMD    MDM  
HD    LH    LM    ML  
HM    MH    LD    DL  
HLD    HLM    DMH    DML  
HLDM    HLDM

2. Practice Sentences

SHE RAN IN THE SAND.  
TODD RAN A MILE.  
IT IS A MILD MONTH.  
LITTLE OLD HENS SIT STILL.  
ED HELD IT THREE TIMES.  
TOM AND HE HAD SOME.  
ANN HAS A COLD NOSE.  
SARAH HAS RED SHOES.  
CALL AND TELL HER.

**LESSON 5**

**Lesson 5 is a review of Lessons 3 and 4, involving the letters produced by Control Key No. 2: R, S, C, H, L, D, M.**

**Students should copy the words and phrases at the top of the exercise sheet for this lesson. For additional practice, Part 2 of the exercise sheet involves forming new words from the letters in the word "CHRISTMAS." Part 3 requires the student to make new words from sequences of scrambled letters. It may be necessary for you to modify or even delete these "creative exercises" for one or more students, depending on age and ability. Here again, the judgment of the teacher is invaluable.**

LESSON 5

1. Copy Words and Phrases

THE	ROSE
CLAD	MITTENS
CHART	SAD LION
MAIL	LAME HORSE
CLAM	CAR DOOR
CENTS	ADD COCOA
CLOSE	STAND AND CHAT

2. How many words can you make using only the letters in the word CHRISTMAS? Type them.

3. Unscramble the letters below to make new words. Type the words you make.

S-T-E-A	(a direction)
H-T-N-R-O	(another direction)
M-R-T-H-O-E	(someone in your family)
S-E-T-N	(a bird's home)
O-O-T	(a word that means also)

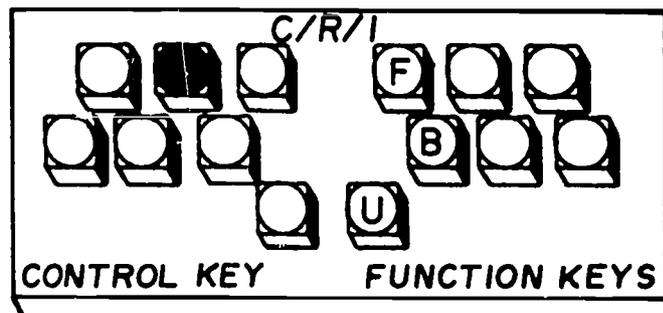
LESSON 6

The second "Training Exercise Test" should be administered at the beginning of this lesson. It is best to precede the test with a brief review of "R, S, C, H, L, D, M, period."

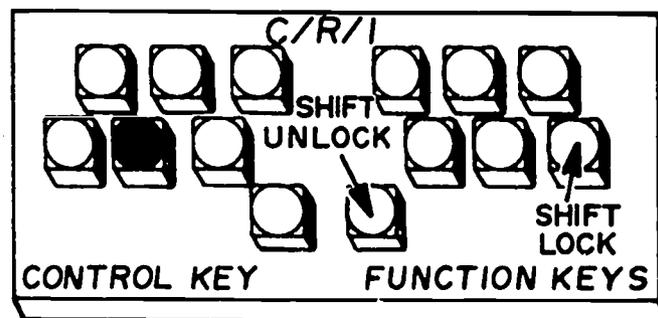
Once the test is completed, present the new material contained in this lesson.

Functions to be introduced in Lesson 6 are: U, F, B, "Shift Lock" and "Shift Unlock."

Students should first be introduced to U, F, and B, produced by Control Key No. 3, then be given time to copy the "Dexterity Exercises" utilizing these letters.



After the children have completed these exercises, show them the keying positions for "Shift Lock" (upper-case) and "Shift Unlock" (lower-case), and have them proceed to the second set of "Dexterity Exercises."



Following the above, students should type the "Practice Sentences" in Part 2 of the exercise sheet.

Thus far, the typewriter has always been placed in the "Shift Lock" (upper-case) position. Starting with this lesson, students will be able to produce upper- and lower-case letters, symbols, and functions by themselves.

Throughout the lesson, emphasize that Control Key No. 3 is used to produce the letters U, F, or B, and that the "Shift Lock" and "Shift Unlock" functions require the use of Control Key No. 6.

TRAINING EXERCISE NO. 2

CATCH MICE.

MOM READS.

LEARN SHORT RIDDLES.

TRAINING EXERCISE TEST

Scoring Sheet

Student's Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Training Exercise Test No. \_\_\_\_\_

1. Location in Cybertyping at end of first minute:

Letter \_\_\_\_\_, Word \_\_\_\_\_

2. Total time for completion \_\_\_\_\_

Note: Attach student's paper to this form and return to C/R/I

LESSON 6

1. Dexterity Exercises

uuu      fff      bbb  
fff      bbb      uuu  
uf      uf      ub      ub      fb      fb  
fu      bu      bf  
ufb      fub      fbu      bfu      buf      ubf  
  
UFB      ufb  
Uu      Ff      Bb  
UfB      uFb

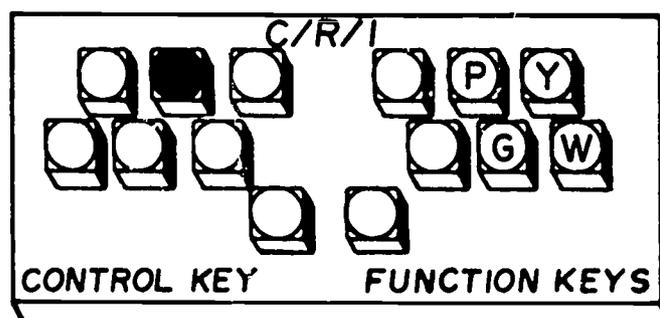
2. Practice Sentences

Call his bluff.  
Ruth has a fur coat.  
See the fat buffalo.  
It fell behind that board.  
Until then Beth felt fine.  
Fred earned a blue ribbon.  
Turn left under the tall tree.

LESSON 7

In this lesson, the students are to be introduced to the remaining four functions of Control Key No. 3.

The functions to be introduced are: P, G, Y, W.



As before, students should first be introduced to the letters in the order suggested above. Allow time to complete the "Dexterity Exercises" involving these new letters; then have students proceed to the "Practice Sentences." If, at the end of the lesson, any students appear uncertain of these functions, provide them with additional practice using the dexterity exercises or practice sentences in this lesson.

LESSON 7

1. Dexterity Exercises

ppp      ggg      yyy      www  
pgp      gpg      ywy      wyw  
py       yp       gw       wg  
pyw      pgw      ywg      ypg  
pgyw     pgyw

2. Practice Sentences

A fat puppy yawned.

Ginny made a floppy poppy.

Many of the frogs were bigger.

Run it up the flag pole.

We flew up to Washington.

The baby played outside in the sun.

Bubbles wiggled through the water.

**LESSON 8**

Lesson 8 is a review of the function series for Control Key No. 3: U, F, B, P, G, Y, W (functions presented in Lessons 6 and 7). Again, it is important that the students master this series before proceeding further in the "Cybertype" code.

For practice, students should copy the words and phrases in Part 1 of the exercise sheet for this lesson. If the students perform well, proceed to the other parts of the exercise sheet. Part 3 involves words beginning with "un." Ask your students to make up words using letters you have previously taught them.

LESSON 8

1. Copy Words and Phrases

purple	flag down
four	fluffy cotton
ply	big bug
dry	baby buggy
typewriter	wagging tail
Cybertype	playful puppy

2. Type the names of the days of the week.

3. How many words, using the letters you have already learned, can you think of that begin with un? Type them.

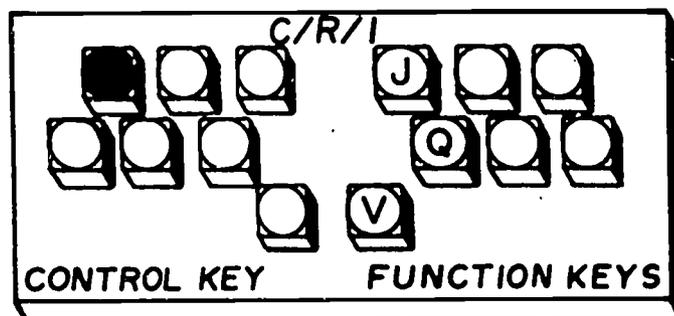
4. Unscramble the letters to make new words. Type the words you make.

n-a-w-y	(a sign that you are sleepy)
g-p-i	(a farm animal)
w-r-g-o	(to get bigger)
w-g-s-a	(what a happy dog's tail does)
f-u-b-f	(to rub to a shine)

LESSON 9

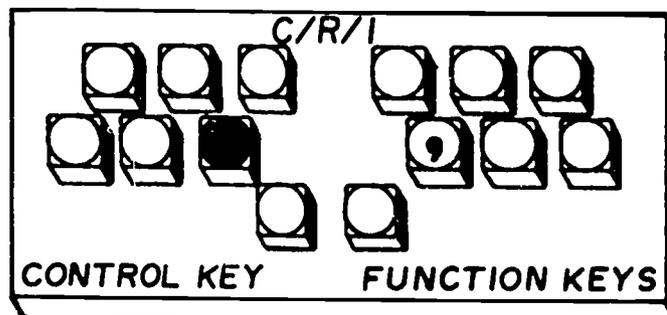
The third "Training Exercise Test" should be administered at the beginning of this lesson. Remember to precede the test with a brief review of "U, F, B, P, G, Y, W."

The functions to be introduced in this lesson are: V, J, Q, and the comma symbol.



Introduce the letters V, J, and Q in the order listed. Allow the students sufficient time to copy the "Dexterity Exercises" involving these three letters. Stress that Control Key No. 4 is used to obtain these functions. The comma should be introduced next. Point out that the comma requires a different control key than that used to produce V, J, and Q. Have students copy the "Dexterity Exercises" including the comma, and continue to the "Practice Sentences" in Part 2.

Part 3 is a creative exercise requiring children to make up words using only the letters in the word "ASTRONAUT." Students usually enjoy the discoveries involved in such "Anagram" word games, and similar language-building exercises may be developed by teachers and students for use as supplementary instructional materials.



TRAINING EXERCISE NO. 3

Long bumpy beds

Franny chews gum.

Frog tripped twice.

TRAINING EXERCISE TEST

Scoring Sheet

Student's Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Training Exercise Test No.

1. Location in Cybertyping at end of first minute:

Letter \_\_\_\_\_, Word \_\_\_\_\_

2. Total time for completion \_\_\_\_\_

Note: Attach student's paper to this form and return to C/R/I

LESSON 9

1. Dexterity Exercises

v v v      j j j      q q q  
j j j      q q q      v v v  
v j      v q      j v      q v  
v j q      v q j      j v q  
j q v      q v j      q j v      v j q  
  
, , ,      , , ,  
v ,      j ,      q ,  
v , j      v , q      j , q  
v , q

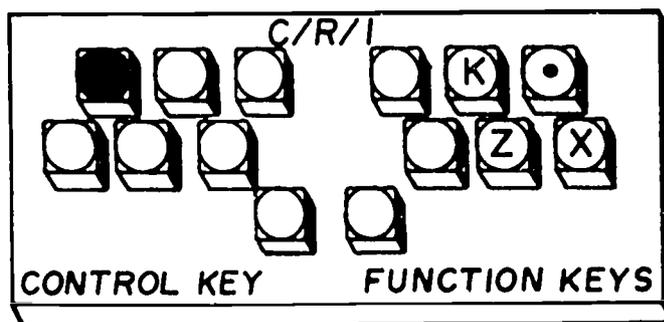
2. Practice Sentences

Joe gave Jane a Valentine.  
Jim, it is very quiet here.  
Quietly jump over the fence.  
Vince visits us every evening.

3. How many words can you make using only the letters in the word ASTRONAUT? Type these words.

LESSON 10

The functions to be introduced in this lesson are: K, Z, .  
(period), X.



Show the students the keying locations for these functions in the order listed, and allow them time to copy the "Dexterity Exercises." Emphasize the fact that the Control Key No. 4 on the left side of the interface is used to produce these functions. Remind students that they have already learned the keying positions for the period, and give some review practice with this punctuation mark, if needed. Finally, have students complete the "Practice Sentences" in Part 2 of the exercise sheet.

LESSON 10

1. Dexterity Exercises

kkk      zzz      ...      xxx  
...      zzz      xxx      kkk  
kz      zk      .x      x.  
k.z      zx      kx      z.  
kz.x      kz.x

2. Practice Sentences

Max and Kathy danced the waltz.

Dr. and Mrs. V. J. Keats were there.

Exit via the next door.

The fox quietly ran past the zebra, the  
kangaroo, and the monkey.

A dozen children quickly ran through the  
maze of people.

Suzie put six zippers in a box.

The fuzzy kitten sneezed.

## LESSON 11

Lesson 11 is a review of the functions introduced in Lessons 9 and 10: V, J, Q, , (comma), K, Z, . (period), X.

Briefly review the keying locations for these functions with the students and have them copy the words and phrases in Part 1 of the exercise sheet. If any students appear uncertain of these functions, provide them with additional practice before proceeding. The students should then complete the exercises in Parts 2, 3, and 4 of the exercise sheet.

Following this lesson, you may want to have the students practice using those exercises from the "Supplementary Materials" Appendix to this Instruction Manual which deal with letters of the alphabet. These exercises will provide a valuable review of Lessons 1-10. Furthermore, the supplementary exercises provide practice with frequently used letter groups and can facilitate "Cybertyping" performance.

Lessons 12-15 introduce the keying locations for numbers and symbols available on the typewriter.

LESSON 11

1. Copy Words and Phrases

buzz	a black kitten
very	a jolly juggler
exit	quit quarreling
walk	a lazy lizard
square	six taxis
zipper	violet velvet
vex	
squeak	
jump	
jam	

2. Type the alphabet. (A, B, C, etc.)

3. Type the names of the months of the year.

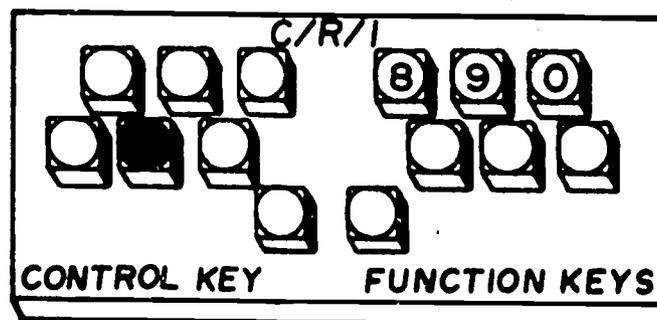
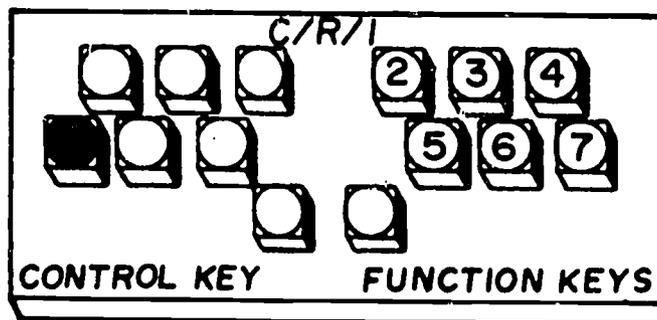
4. Now that you have learned to "Cybertype" all the letters of the alphabet, make up three sentences of your own and type them.

LESSON 12

The fourth "Training Exercise Test" should be administered at the beginning of this lesson. As usual, precede this with a brief review of the functions to be tested. Once the test is completed, introduce the new material in this lesson.

The functions to be introduced in this lesson are the numerals: 2, 3, 4, 5, 6, 7, 8, 9, 0.

The numerals 2 through 7 are obtained with the Control Key No. 7, while 8, 9 and 0 are part of the series for Control Key No. 6.



On some typewriters, it is necessary to use the lower case letter "l" for the numeral "1." Other typewriters will have the numeral "1" (one) as the first function in the Control Key No. 7 series. Be sure to check this on your typewriter and interface before introducing numerals to the students. If your electric typewriter employs the lower case letter "l" for the numeral "1," instruct your students accordingly.

Introduce the keying locations of the numerals to the children, then have them complete the "Dexterity Exercises" and the "Practice Sentences." The numerals are relatively easy to learn because their keying locations are arranged in ordinal sequence. Supply additional practice on the numerals for those students who need it; appropriate exercises may be found in the Supplementary Materials section of the Appendix to this manual.

TRAINING EXERCISE NO. 4

I have a blue jar.

A lazy dog was quiet.

The monkey pinched the fox.

**TRAINING EXERCISE TEST**

**Scoring Sheet**

**Student's Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Training Exercise Test No.** \_\_\_\_\_

**1. Location in Cybertyping at end of first minute:**

**Letter** \_\_\_\_\_, **Word** \_\_\_\_\_

**2. Total time for completion** \_\_\_\_\_

**Note: Attach student's paper to this form and return to C/R/I**

LESSON 12

1. Dexterity Exercises

1 2 3 4            1 2 3 4  
5 6 7            8 9 0  
1 2 3 4 5 6 7 8 9 0  
10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0  
25            34            16            78            90  
57            41            63            829            0  
0 1 2 3 4 5 6 7 8 9 10

2. Practice Sentences

Mother needs 2 loaves of bread and 4  
quarts of milk.

I will be ready on the count of 3.

There are 7 bananas in this bunch.

A dozen is the same as 12.

John has 56 marbles, and Ken has 98 marbles.

In a countdown, 0 is the last number.

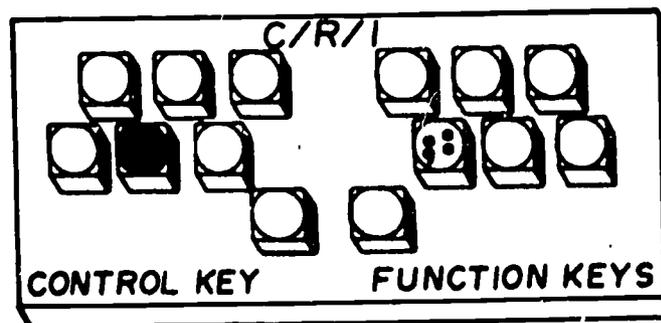
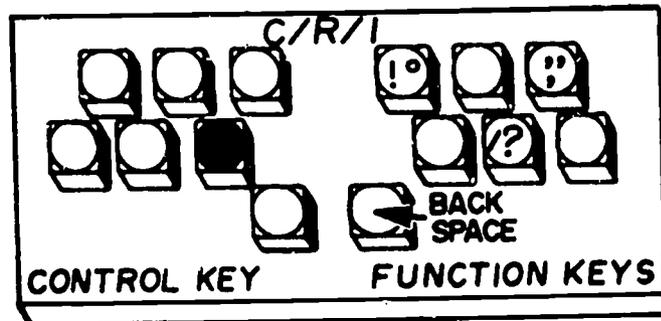
1 2 3 4 5 6 7 8 9 10, ready or not,  
here I come.

LESSON 13

Briefly review the numerals, then administer the fifth "Training Exercise Test." Present the new materials in this lesson once the test is completed.

Lesson 13 introduces the frequently used punctuation symbols which have not been taught previously. These symbols are obtained with the Control Keys. No. 5 and No. 6.

The functions to be introduced in this lesson are: / ? ' " backspace ! ; :



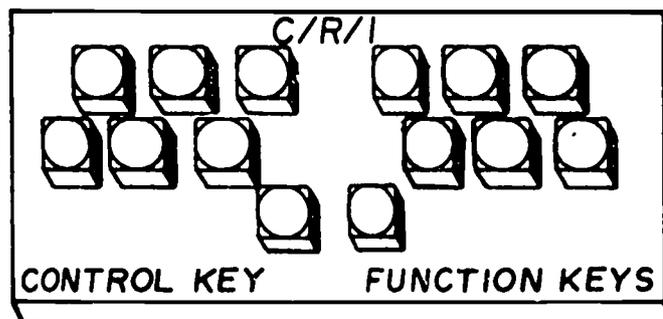
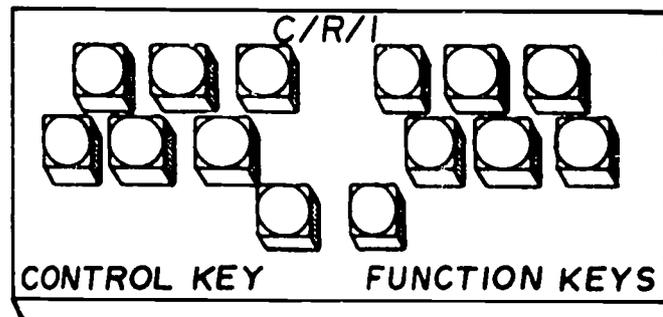
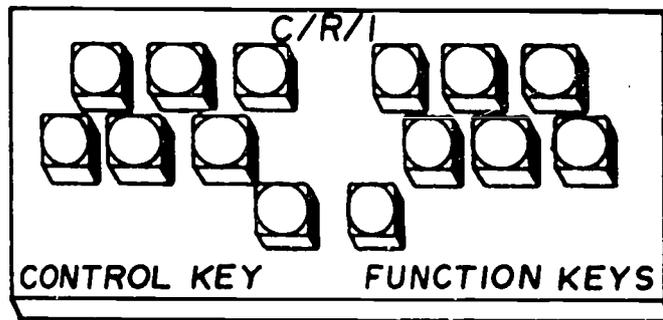
Introduce the symbols obtained from the fifth and sixth Control Keys in the order given above. It may be necessary to explain the significance of these symbols to some students. Several of these functions are located in upper case as shown in the preceding illustration.

After introduction of the symbols, students should complete Parts 1 and 2 on the exercise sheet. If necessary, provide additional practice using Supplementary Materials in the Appendix.

Some punctuation symbols are not introduced in this Instruction Manual because they are used so infrequently. These symbols include: \* ( ) @ # \$ & %

If an individual student needs to type any of these symbols, the keying locations can be identified by referring to the diagrams in Figure 3 of the Introduction (page 7). Since typewriters vary in the key assignments for certain symbols, dual keying positions can be verified in the following manner: (1) Check the numeral keys on your typewriter to find the symbol desired, remembering that the symbols are upper case functions on typewriters; (2) note the dual keying positions for the numeral corresponding to the desired symbol; (3) place the typewriter in Shift Lock (upper-case) position; and (4) type the desired symbol.

If your keying assignments for certain symbols do not correspond with Figure 3 (page 7), fill in the key positions for these functions using the blank charts on the next page.



TRAINING EXERCISE NO. 5

379 minus 379 equals 0.

4 x 6 is 24.

58 plus 1 is not 8.

62 minus 10 is 52.

**TRAINING EXERCISE TEST**

**Scoring Sheet**

**Student's Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Training Exercise Test No.** \_\_\_\_\_

1. Location in Cybertyping at end of first minute:

Letter \_\_\_\_\_, Word \_\_\_\_\_

2. Total time for completion \_\_\_\_\_

**Note: Attach student's paper to this form and return to C/R/I**

LESSON 13

1. Dexterity Exercises

///      ???      "'      ""      ;;;      :::

/?      /?      ?/

' "      ' "      " '

; :      ; :      : ;

(practice the backspace)

!      !      !

/      ?      '      "      !      ;      :

:      '      ?      /      "      ;      !

2. Practice Sentences

I am here; Dad is over there.

Do you want to come along?

"Ouch! It hurts!" cried Mike.

Ann is 8; Mary is 7.

Buy the following: coffee, cheese, milk,  
cookies and/or doughnuts.

Is Nov. 12, 1970, also written 11/12/70?

Begin the letter with Dear Sir:.

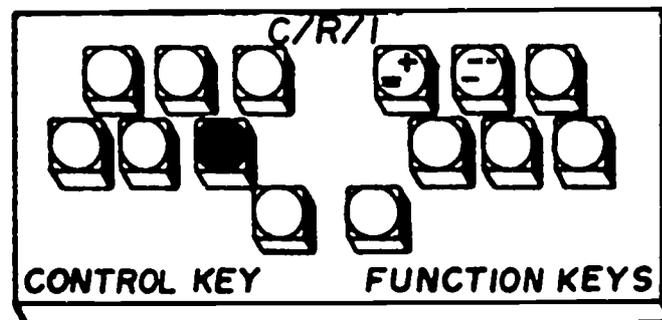
"That's Pam's bike," said her brother.

## LESSON 14

The sixth "Training Exercise Test" should be administered at the beginning of this lesson. Precede this with a brief review of the punctuation symbols. Once the test is completed, present the new material contained in this lesson.

This lesson introduces the math symbols. These are obtained with the Control Key No. 5.

The symbols to be introduced are: = + - (minus) (underline). Keying positions for these symbols are shown in the chart below for the IBM "Model C" electric typewriter. IBM "Selectric" typewriters with "Prestige Elite," "Courier," "Letter Gothic," or "Delegate" type styles do not provide the "+" and "=" symbols at all. Check the typewriter assigned to your program to verify positions for these symbols.



As illustrated in the above diagram, + and \_ are upper case functions; = and - are lower functions.

For multiplication, the small "x" is used, and a small "d" is suggested for the division sign. The "d" has been chosen to represent "divided by."

Have students complete the "Dexterity Exercises" and the math problem activities on the exercise sheet. Provide additional practice materials for students requiring further assistance.

TRAINING EXERCISE NO. 6

He said, "Is it Al's?"

Oh no; not now!

Dear Sir:

**TRAINING EXERCISE TEST**

**Scoring Sheet**

**Student's Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Training Exercise Test No.** \_\_\_\_\_

**1. Location in Cybertyping at end of first minute:**

**Letter** \_\_\_\_\_, **Word** \_\_\_\_\_

**2. Total time for completion** \_\_\_\_\_

**Note: Attach student's paper to this form and return to C/R/I**

LESSON 14

1. Dexterity Exercises

===      +++      ---      \_\_\_ (3 underlines)  
 =+      =+      +=  
 -\_      -\_      --  
 =\_+-  
 -=+\_  
 \_=-+  
 =+-\_      =+-\_  
 x      x      d      d      /      /

2. Math Problems

1+7=8

6-2=4

5x2=10

9d3=3

14	9	6	24	39	4
<u>+3</u>	<u>-5</u>	<u>x2</u>	<u>+1</u>	<u>-8</u>	<u>x4</u>
17	4	12	25	31	16

4d2=2

**LESSON 15**

**This is the last formal lesson of the Instruction Manual. Begin by administering the seventh, and final, "Training Exercise Test" found on the next page.**

**The exercise sheet for this lesson consists of suggestions for creative writing. However, for this exercise, children should be encouraged to develop their own ideas in creating stories to be printed using their interfaces.**

**TRAINING EXERCISE NO. 7**

$$2+2+4=8$$

$$7-6=1$$

$$5 \times 1 = 5$$

$$9 \div 3 = 3$$

**TRAINING EXERCISE TEST**

**Scoring Sheet**

**Student's Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Training Exercise Test No.**

**1. Location in Cybertyping at end of first minute:**

**Letter** \_\_\_\_\_ **, Word** \_\_\_\_\_

**2. Total time for completion** \_\_\_\_\_

**Note: Attach student's paper to this form and return to C/R/I**

LESSON 15

Suggestions for Creative Writing:

Once there was a little boy who loved  
(popsicles)...

Once I found...

Once a \_\_\_\_\_ lived deep in the woods...

Once upon a time, long ago, ...

Once there was a family of purple  
caterpillars ...

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**C/R/I**  
**INSTRUCTION MANUAL**

**APPENDIXES**

- I. The Cyber-Circus Story    Page A-1**
- II. Supplementary Materials    Page B-1**

## THE CYBER-CIRCUS STORY

### Introduction

The following experimental teaching program developed for use with one class of dual-input interfaces is based on the principles of associative learning. One purpose of these instructional materials is to assist the student in learning how to communicate effectively in written form using the various types of interfaces designed for disabled persons.

Experience has shown that the circus story intrigues children and transforms an ordinary learning task to an eagerly awaited event. The Cyber-Circus Story gives meaning and life to each typewriter function and its respective keying positions. Each circus setting or event provides a concrete clue with which the student can associate letters, symbols, and punctuation marks. The story associations impress upon the student the fingering positions for these functions on their keyboards.

Inexpensive, colorful circus models may be built in the classroom, including three tents and the characters in the story. Thus, the story comes alive with animated, purposeful, and associative ideas. Children can also refer to the drawings which accompany the story in this Instruction Manual. Copies of these drawings may be given to young children as a "coloring book," an exercise which will further increase interest in learning to communicate.

The Cyber-Circus Story should be told to the children at the start of the instructional program, before they have even been introduced to their keyboard interfaces. As the story is told, reference can be made to the appropriate drawings or to the circus models, if these are available.

After the entire circus story is read to the children, they will enjoy the daily lessons that follow. During each day's lesson, reference should be made to the appropriate events in the story.

## THE CYBER-CIRCUS STORY

### "Let's Go to the Circus"

It was spring and the towns people were anxiously awaiting the arrival of their annual circus.

One day, while the Interface children, Eva, Tom and Ann, were returning from school, they saw a man posting circus signs reading, "The Cyber-Circus is Coming to Town."

The children ran home breathlessly to tell their mother, but to their surprise, their mother had big news for them. She said, "Children, I heard that the circus is coming to town so I hurried downtown and bought tickets for Saturday." Eva, Tom and Ann clapped their hands and shouted with glee, "Hurrah for Mom." "Wait," interrupted their mother, "I have another surprise for you. Each of you may go downtown and buy one thing to take with you on the bus to the circus grounds."

Early Saturday morning, the children went downtown. Eva bought Oatmeal cookies, Tom bought Nuts and Ann surprised every-one with a cup of Ice cream which she kept in the freezer until the bus left for the circus.

E T A  
O N I

The bus left at noon and the Interface family was all ready to go. Eva boarded the bus first, then Tom, and Ann followed. Mother took the front seat directly behind the bus driver. The bus driver was a very kind and understanding young man for he permitted their dog to occupy the last seat in the bus if he did not cause a disturbance.

When the bus reached the circus grounds, there was a smell of sawdust and canvas in the air. The big Circus Parade was in progress. Many bands were playing their loudest. A steam organ with its steam whistle pipes, mounted on a red, white and blue wagon, delighted the children. Huge elephants, little elephants, and elephants with funny hats followed holding each other by the tail and swinging their trunks to the organ music. There were also roaring lions and tigers in fancy circus wagons, camels giraffes, pretty girls riding white horses, a bear on a motorcycle,

and clowns—fat ones and thin ones, tall ones and short ones; clowns with red ball noses, big mouths, and bigger shoes, all marching to the "oompah, oompah, boom, boom" of the big brass drum in the band. With the end of the parade, the circus audience readied themselves for a gala day.

"Let us see the shows in the three tents first, children," said mother, "Then we will see all the side shows later." "Look," cried Tom, "There are the three huge tents on the left side of the grounds." "Oh yes," said Eva, "And each tent has a large letter on its banner." "Those letters all mean something," said mother, "Listen to hear what the barker is saying."

A barker wearing a bright green and red striped jacket with a straw hat, and holding a cane was standing on a stool in front of the 'R' tent calling: "Come to the 'R' tent and see three great animals acts. There's a big event in each of the three rings. Hurry! Hurry! Hurry!"

R

The Interface family joined the circus crowd and moved into the tent.

Everyone rushed over the sawdust floors to the bleacher seats. Eva, Tom and Ann were never so happy as they sat swinging their legs back and forth, eating oatmeal cookies, nuts, and ice cream, and blowing up their balloons. Up and down the aisles, men with white coats were selling soft drinks, popcorn, nuts and balloons. The excitement and noise frightened their dog so much that he leaped up on Tom's lap to be safe. The bands were playing and all the circus crowd tapped out the rhythm of the music while waiting for the show to begin.

The barker was now inside the tent and standing on a high pedestal shouting in his megaphone, "Ladies, Gentlemen, and Children! Be seated, as our first act is about to begin." Just then in the first ring, a Camel galloped in briskly with a tall Skinny clown riding on his back. The Camel shook, kicked, and tried furiously to shake Skinny from his back. Skinny flew from side to side, up and down the Camel's humps, and almost fell off at times, but he managed to stay on. "How can he possibly stay on?" said Tom. "Hold on Skinny," shouted the entire audience, "Don't give up." Skinny won. When the act ended, Skinny, the clown, waved to the children as he rode out of the ring.

S  
C

At the height of all this excitement, a tall green Ladder was being set up in the second ring. All of a sudden, a little Hen fluttered into the second ring and landed on the first rung of the Ladder. She fluttered and struggled as she climbed up the Ladder. "Oops," cried the audience when the Hen almost toppled over. Everyone held their breath. It took a lot of doing, but the brave little Hen made it to the top of the tall green Ladder. Everyone agreed that this was a great and very unusual act.

H  
L

All was quiet as the hen left the ring until a big Monkey in a red velvet suit entered the third ring. The children clapped and clapped for the Monkey. The Monkey gave a great performance doing tricks and turning somersaults. He leaped up on a pole and shinnied up to the top. There he waved his little hat to the children. As he slid down the pole, a fantastic thing happened! Eva, Tom and Ann's dog jumped off Tom's lap, ran down the tent aisle, and into the third ring. He leaped up on the Monkey's back! In a split second, the entire audience was standing on top of the bleacher seats shouting and cheering. The Monkey, taken by surprise, furiously tried to shake the Dog from his back, but the Dog did not fall off. Everyone laughed, as they thought it was a planned act. The Interface family realized that they were in trouble, and Tom ran down to get his Dog. "Hurrah! Hurrah! Yippie!" screamed the children. Then the owner of the circus stopped Tom and said, "Young man, do you realize that this is one of our best acts?" He was so pleased that he hired their Dog and paid Mrs. Interface for the Dog's services and gave the children free circus tickets for the season.

D  
M

"Hurry, mother," called the children when all this excitement had subsided, "Everyone is going to the second tent, the 'U' tent." The barker in all his glory was shouting, "Hurry! Hurry! Hurry! See the greatest clown acts in the world. Bear to your left, all you (U) folks and all you (U) children. Don't miss a single act."

U

As the children entered the 'U' tent, clowns were throwing candy kisses to the lucky audience. Tom found ringside seats. When the band stopped, everyone looked to the first ring. In it was a huge blue and red Ball. Suddenly, Flippo clown ran into the ring and leaped on that Ball. His feet traveled like the wind as he rolled the Ball all around the ring, up and down three steps, up and down a steep ramp. The more the audience clapped and

cheered, the faster Flippo rolled the Ball. Finally, he hopped off the Ball and ran out of the ring.

F  
B

The band played and many clowns danced outside the rings. Looking at the second ring, Tom discovered that the floor of that ring looked like a roller skating rink. "I bet our next act will be penguins on skates," said Tom. "Nope," answered Ann, "We will now see clowns doing figure skating." No sooner had Ann spoken, when Poppo clown, holding a small Goat by his four feet, skated into the ring. "What a skater," announced the barker, "Folks, please welcome Poppo clown and his Goat. His spectacular act has had world acclaim." The tent was filled with great applause. Poppo performed on his roller skates doing "figure eights" and many stunts while holding tightly to his Goat. The Goat was wriggling and wriggling until he finally got loose and sprinted around the ring. What fun the Goat had running from Poppo. "Get him, Poppo!" shouted the audience. What a skater! What a thrill! What a Goat! At last, Poppo carefully caught the Goat, then skated out of the ring in the midst of thunderous applause.

P  
G

The barker moved to ring three and shouted, "Ladies, Gentlemen and Children! You are about to see the only tent in the world that can automatically open its top." What a sight to look up and see the top of the tent folding back. As the top folded back, there was the roar of an airplane. It was a plane with a stunt clown doing very dangerous but thrilling tricks in the air. While people were watching this, a clown carrying a sign saying, "I am Yummy," parachuted from the plane into a Water tank in the center of the ring. It was so sudden that part of the circus crowd screamed while others sat speechless and stunned. The big splash was heard a block away. There was an outburst of applause as "Yummy" climbed out of the Water tank and bowed to the audience.

Y  
W

My, how busy the barker was that day! He called everyone to the last tent, which was the 'V' tent. He promised that, although it was the last tent, many surprises were in store for all who attended. "Don't dilly-dally along the way or you will miss Jay clown, our real cowboy clown with his magic rope. Please enter the tent two-by-two; don't crowd; go in an orderly fashion, for the show will not begin until all are seated." Everyone listened, and streams of people entered the 'V' tent, going in two-by-two.

V

When the band stopped playing, Jay clown began twisting and twirling his magic rope in the first ring. With his rope, he formed triangles, squares, circles, geometric forms, and all types of figures with great ease and as a real expert. He left his best trick until last. He was the only clown who could make a perfect letter 'Q' with a rope. Jay clown really made a very good 'Q' on the floor of the first ring.

J  
Q

While Jay ran out of the ring with his rope, a large Kangaroo hopped into the second ring in leaps and bounds terrified by a striped Zebra which was chasing her. Frightened, but with no place to hide, the Kangaroo leaped high into the air and jumped right over the Zebra. She jumped over the Zebra again and again. Pretty soon the Zebra was so confused and bewildered that she sat down in the middle of the ring and just looked up at the hopping Kangaroo.

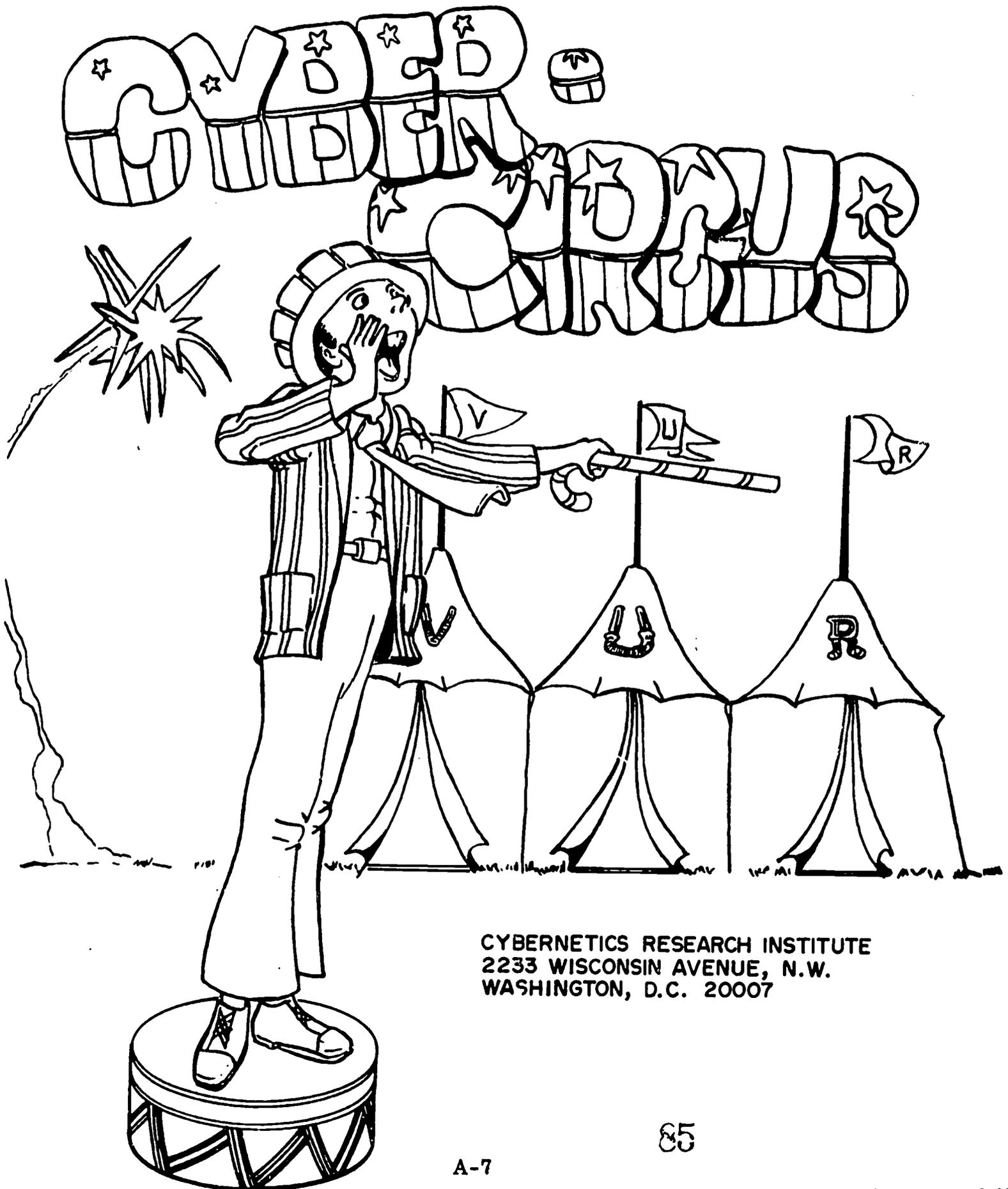
K  
Z

Even though the show was almost over, there was much excitement going on in the third ring. Children jumped up on their bleacher seats to see a little girl dressed in a bright red dress with one big dot on the front. The dot looked like the 'period' we use at the end of our sentences in writing. The little girl always wore such a dot on her dress, so they called her 'Dot.' She performed many interesting tricks with her baton. She twirled it over head, between her legs and in every direction. She was really great. Eva shouted, "Hurrah for Dot, I wish I could do as well with my baton." Dot was in ring three which was directly ahead of a stairway leading out of the tent. Dot had an important responsibility in this circus to direct the circus audience out of the 'V' tent to the eXit door. Dot looked so cute as she pointed downstairs to the eXit door.

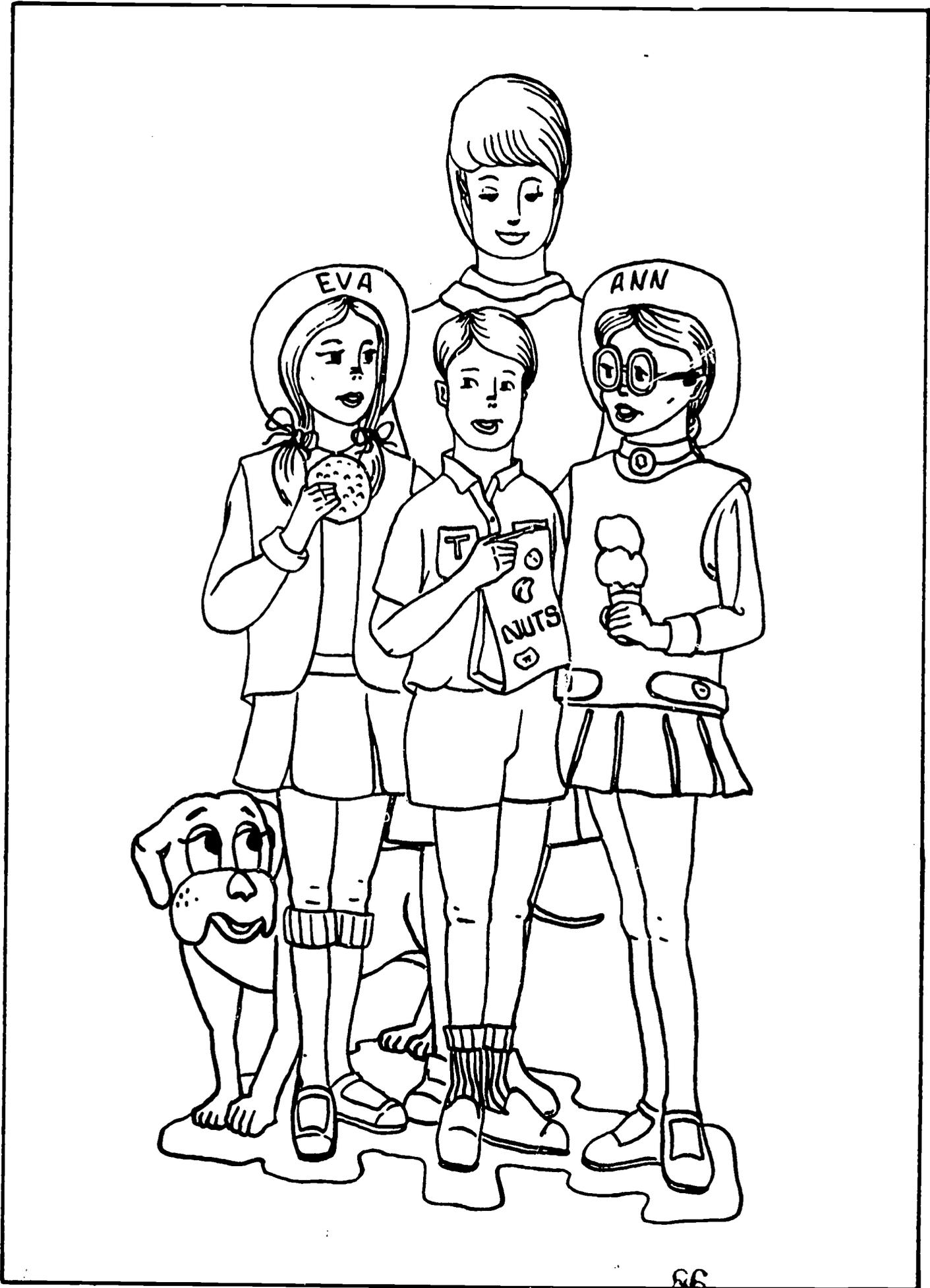
.  
X

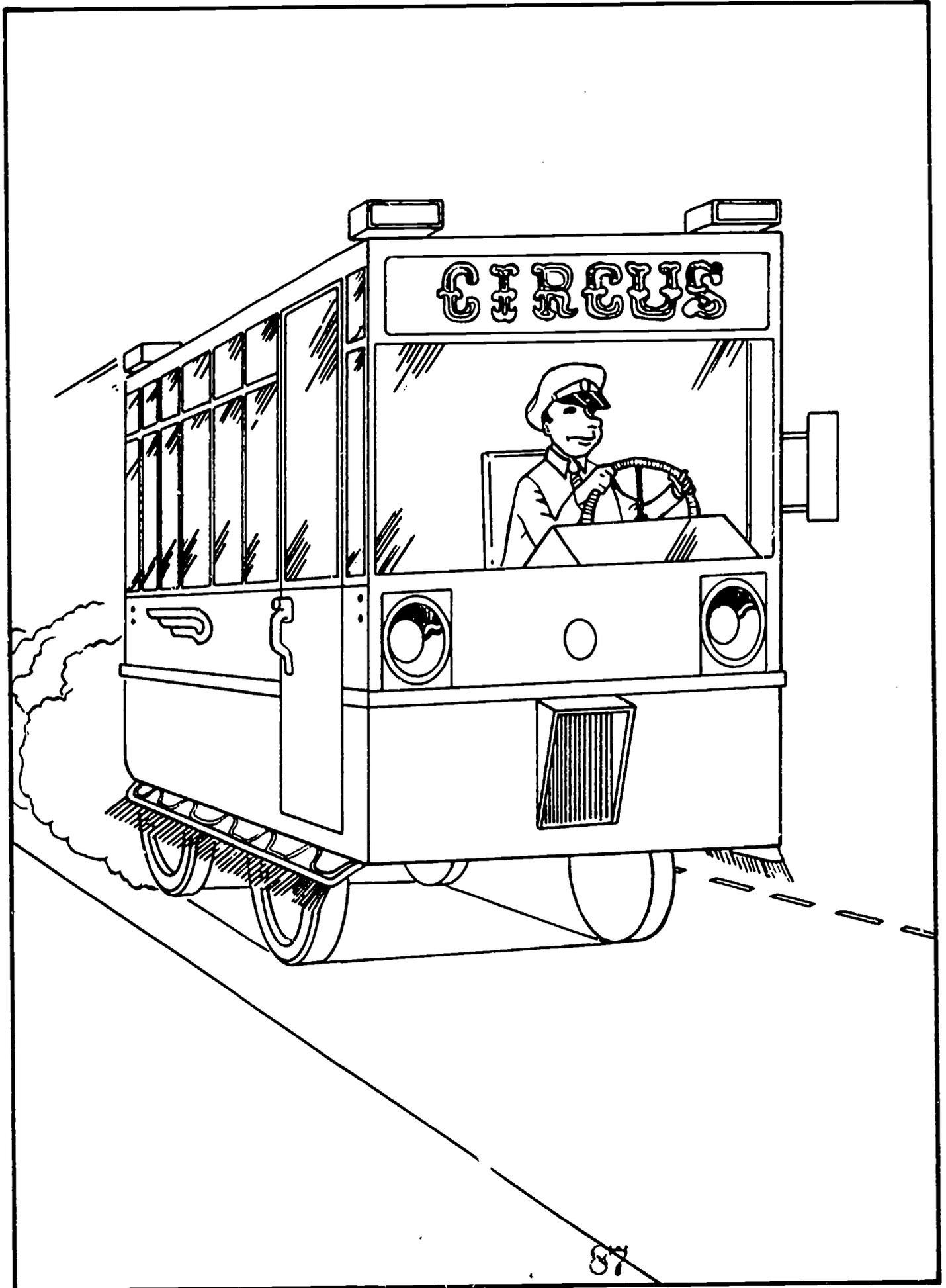
This was the end of the tent shows at the Cyber-Circus. Eva, Tom and Ann and their mother agreed that the barker was right when he announced that the circus was the greatest show on earth.

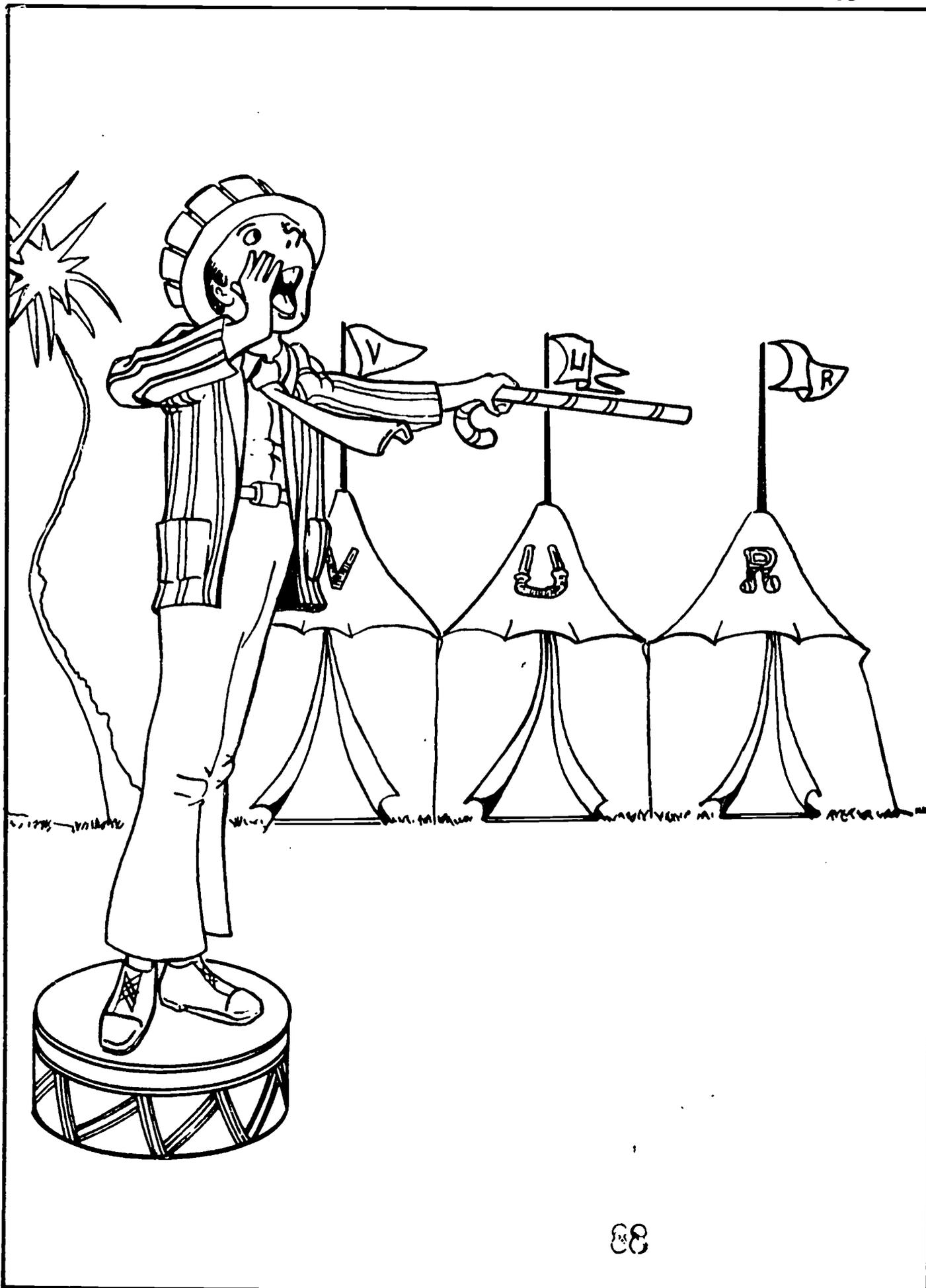
That evening, the Interface family and their famous dog returned home tired but very happy.

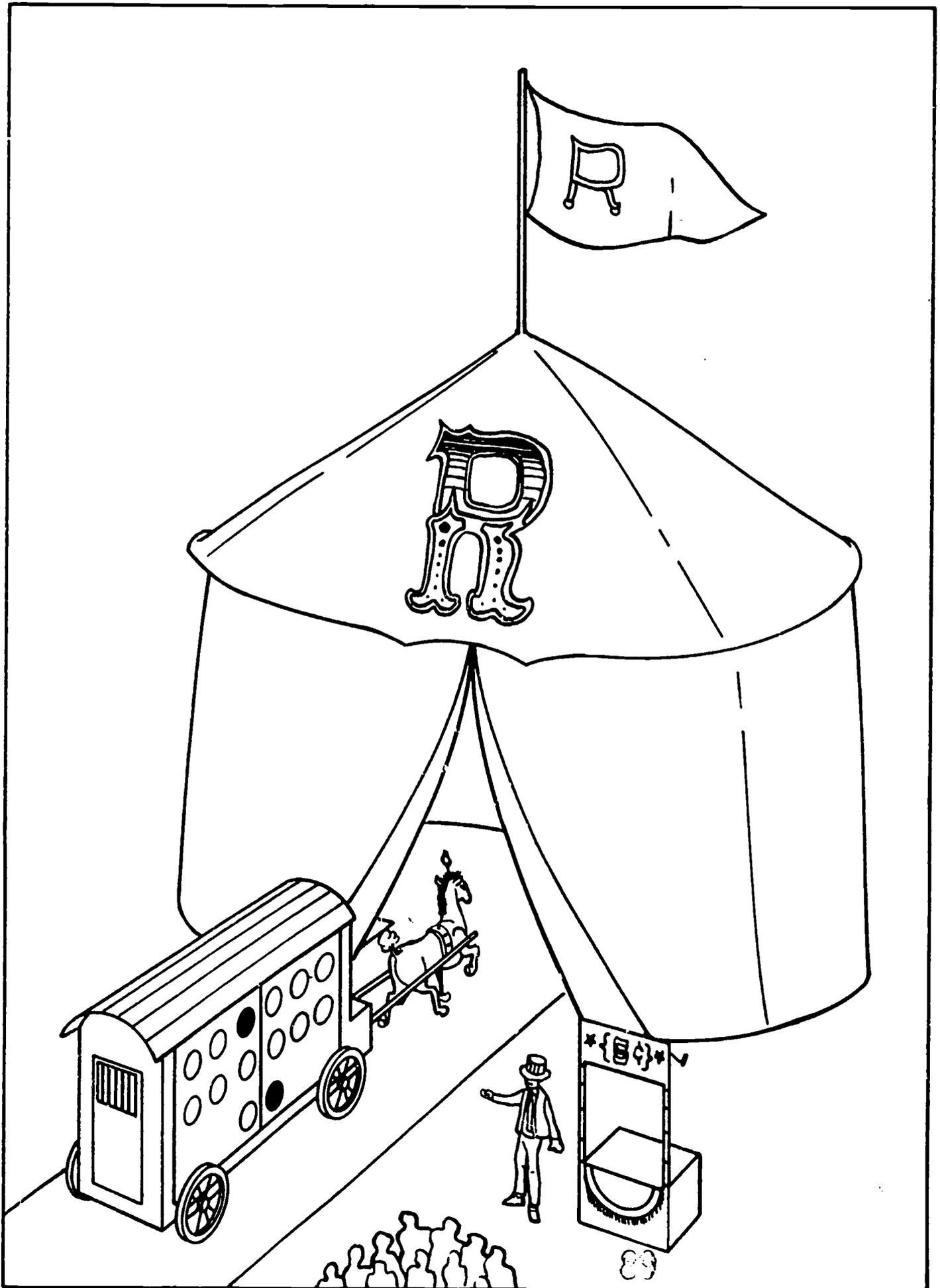


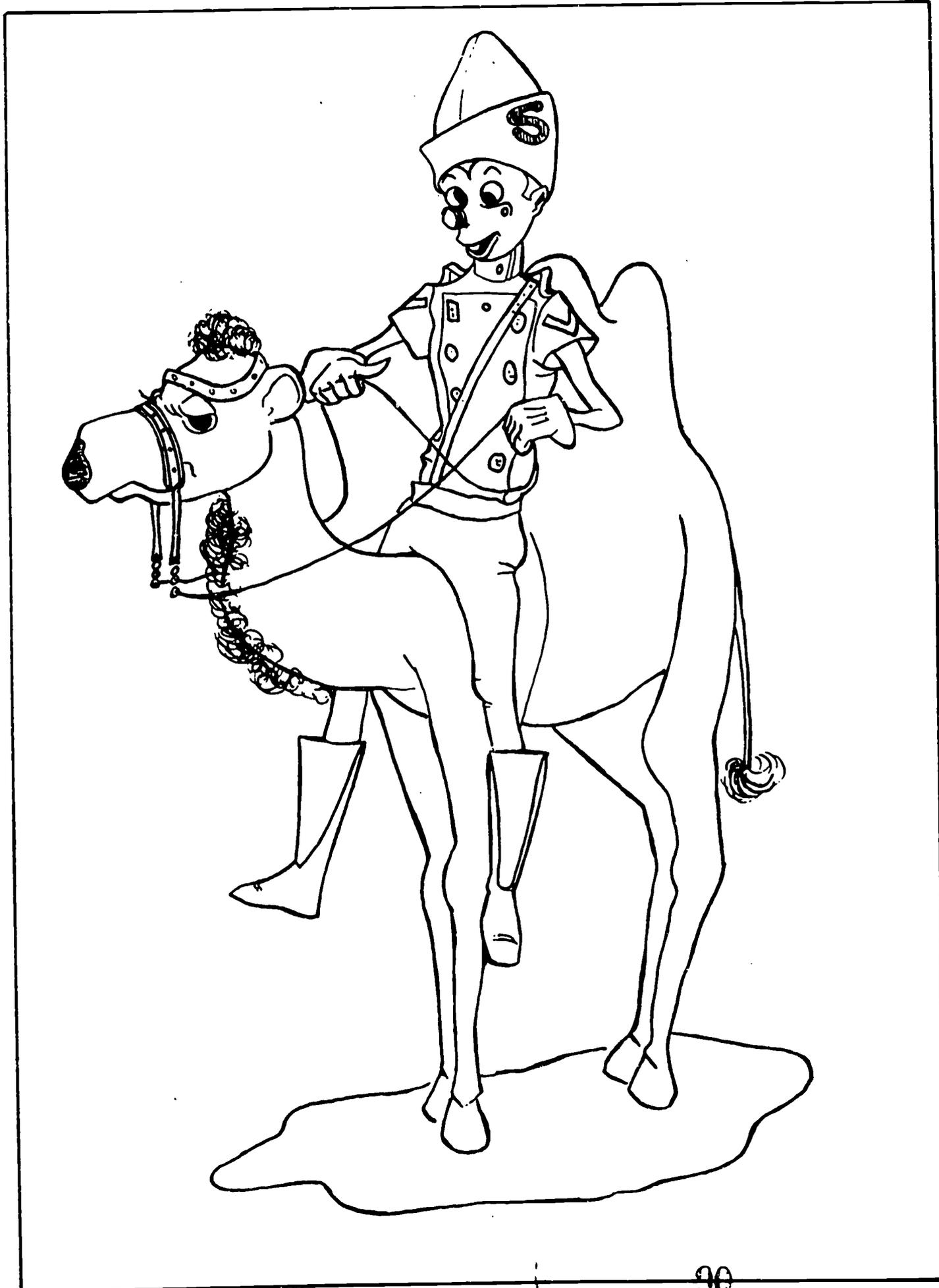
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WASHINGTON, D.C. 20007

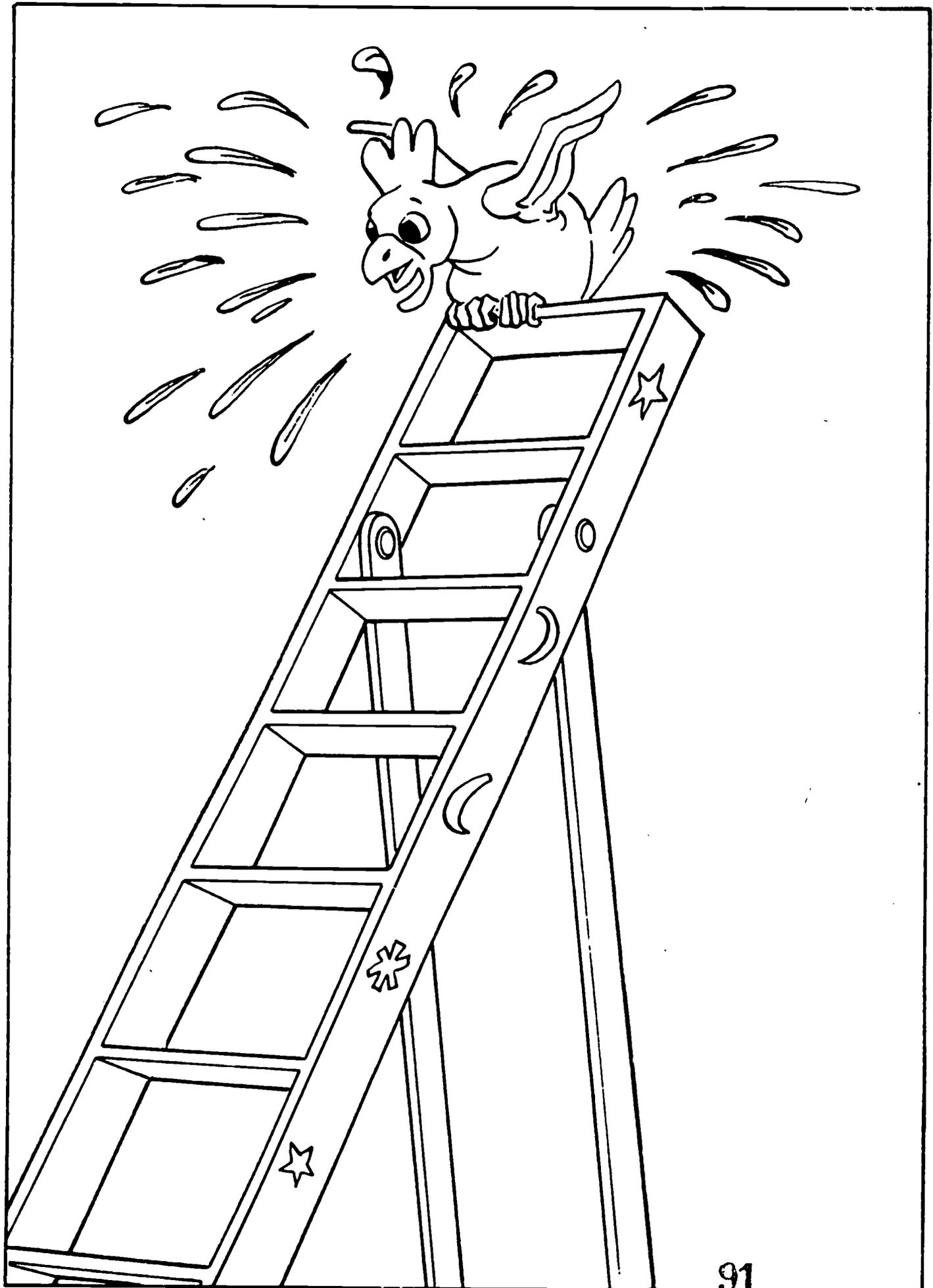


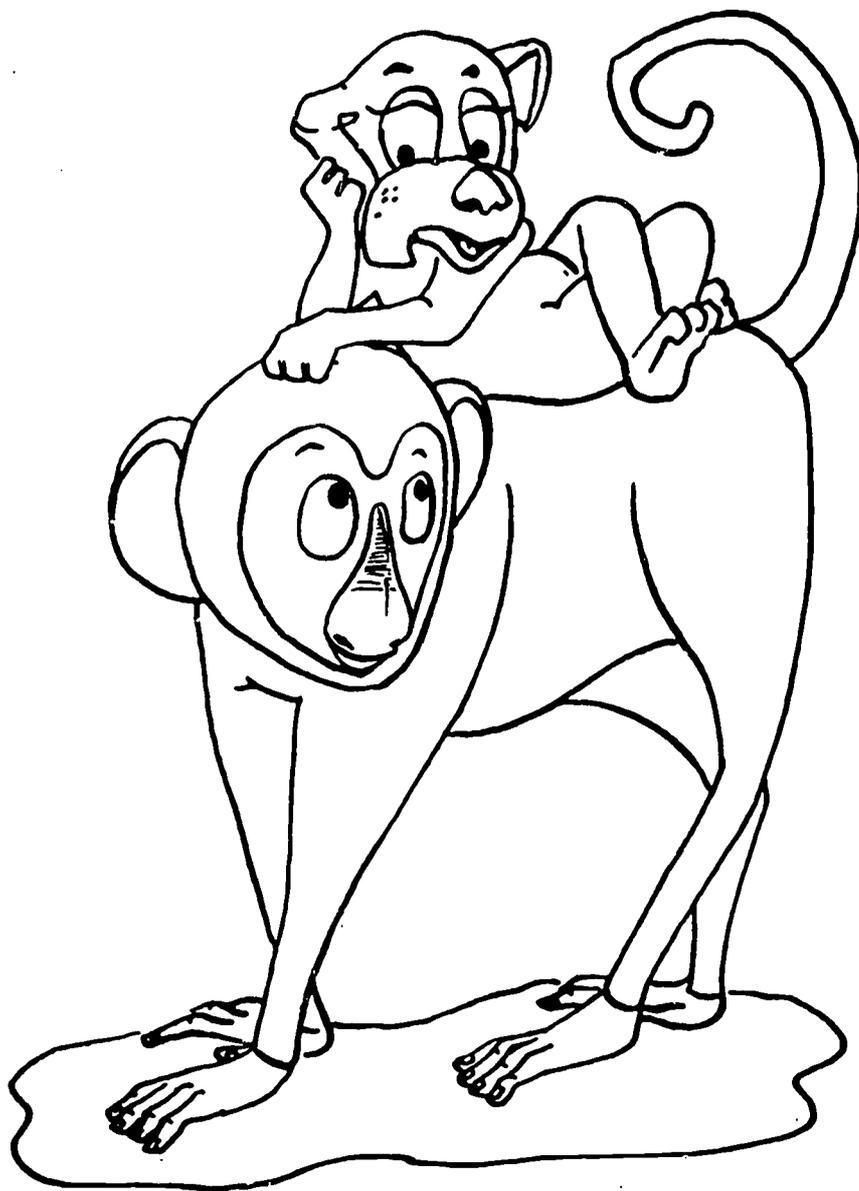


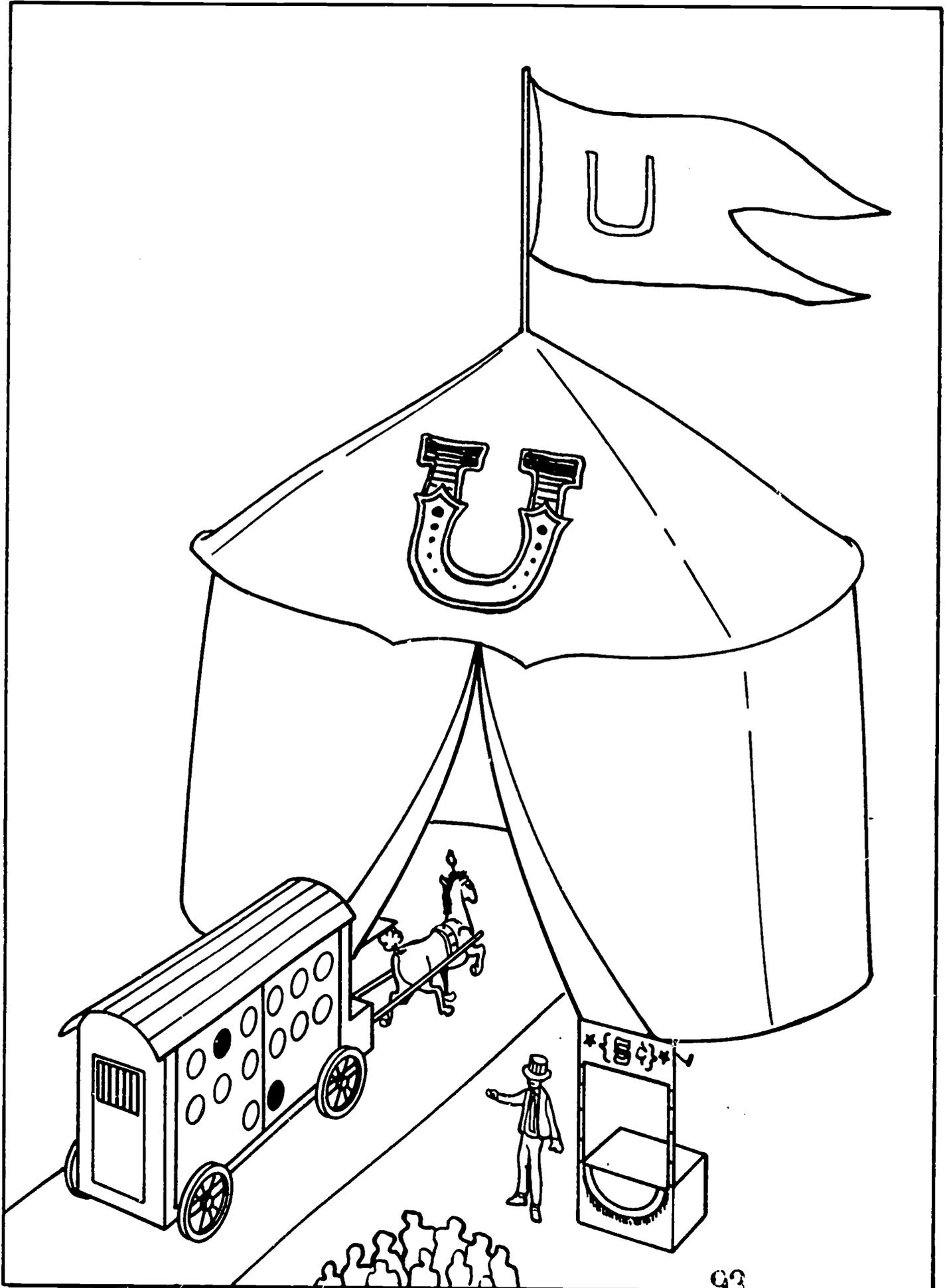


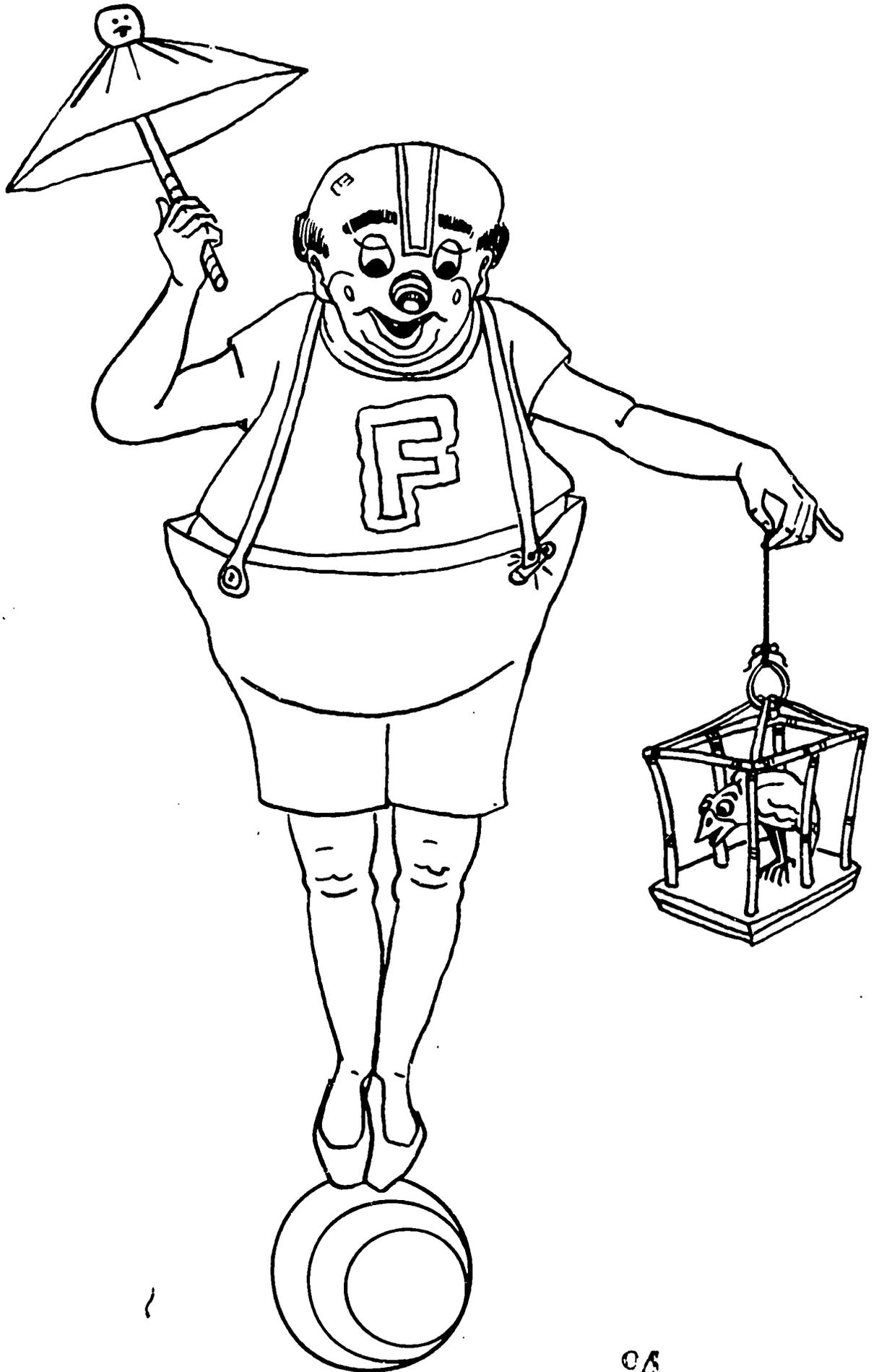


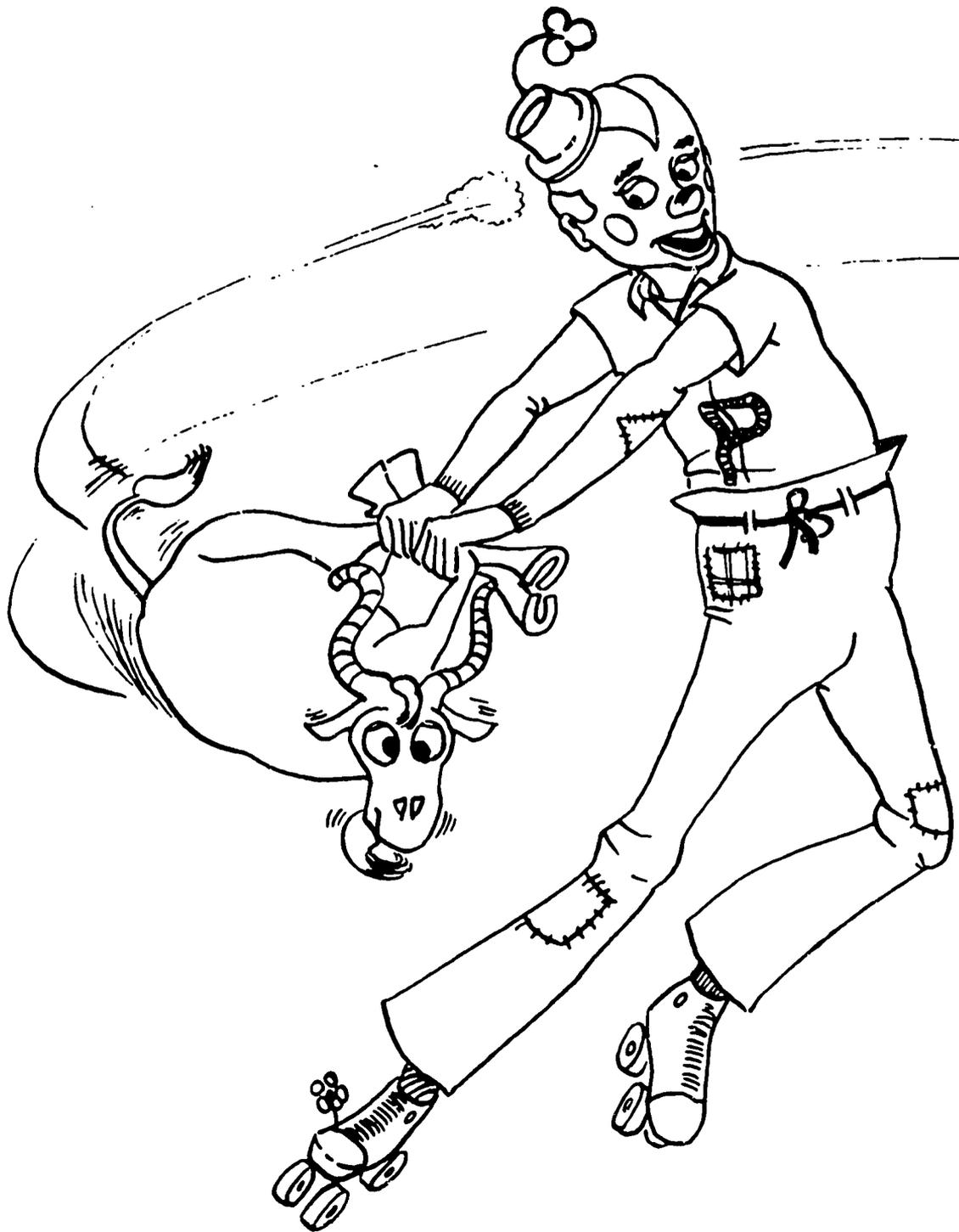


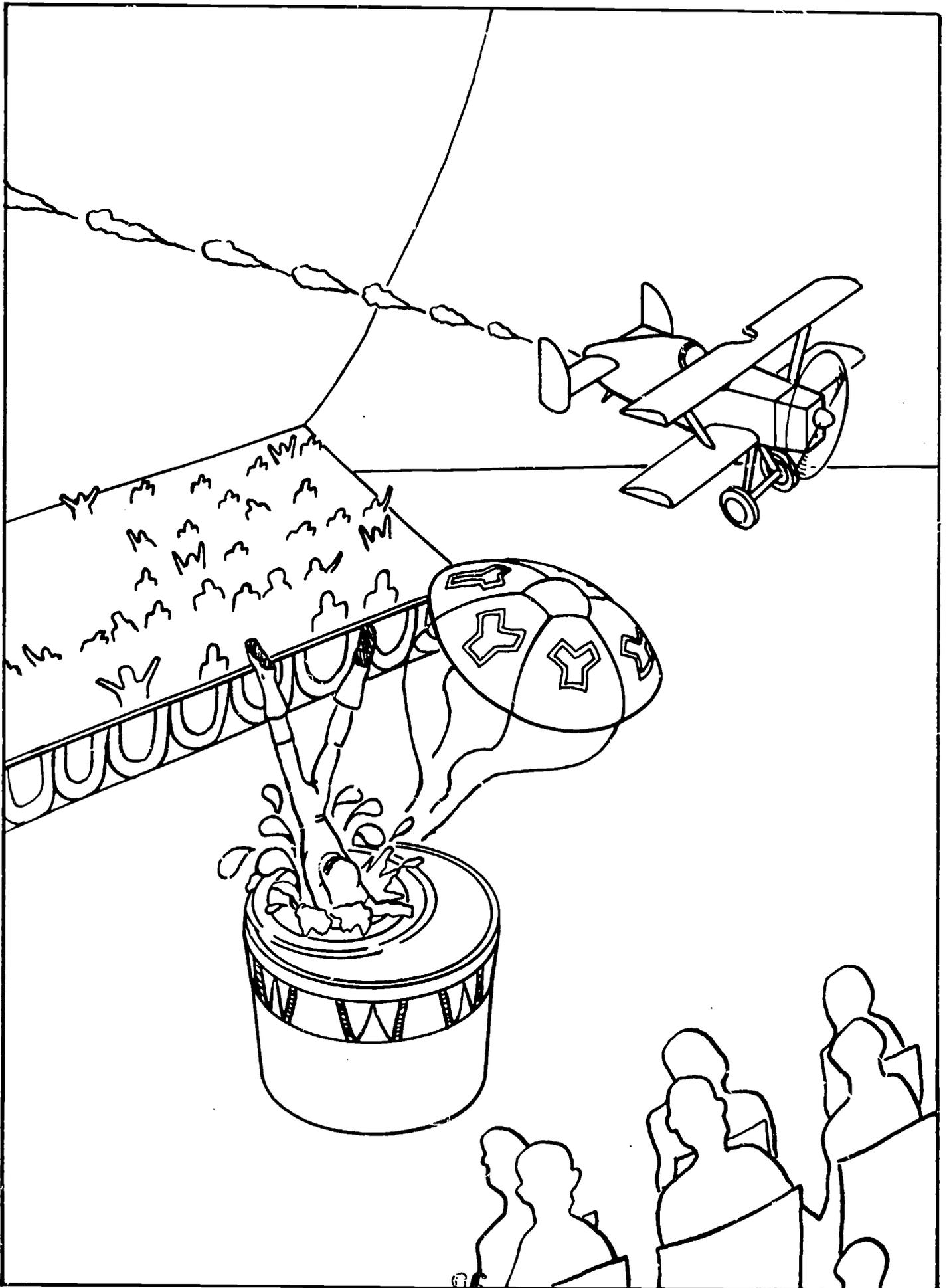


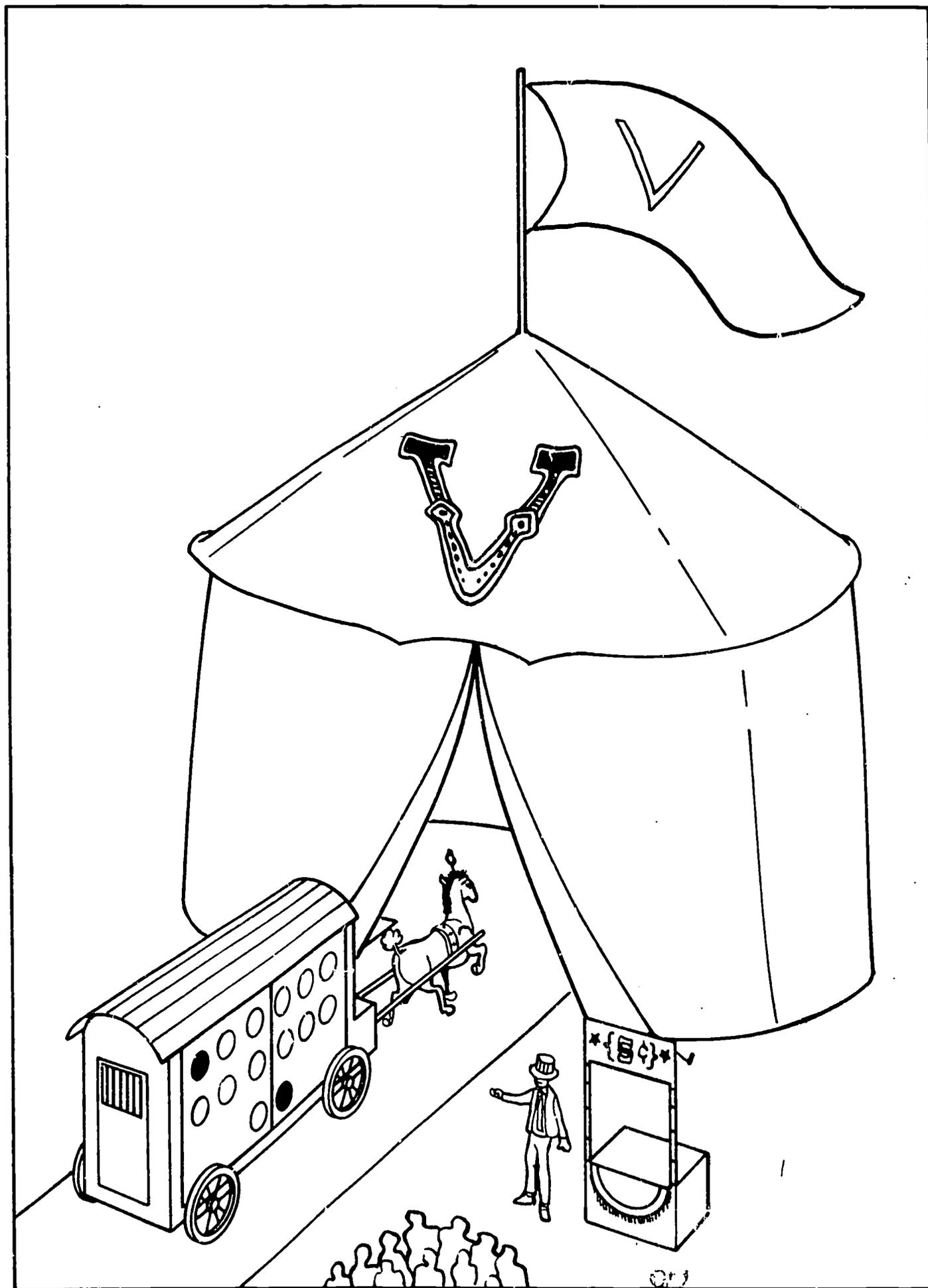




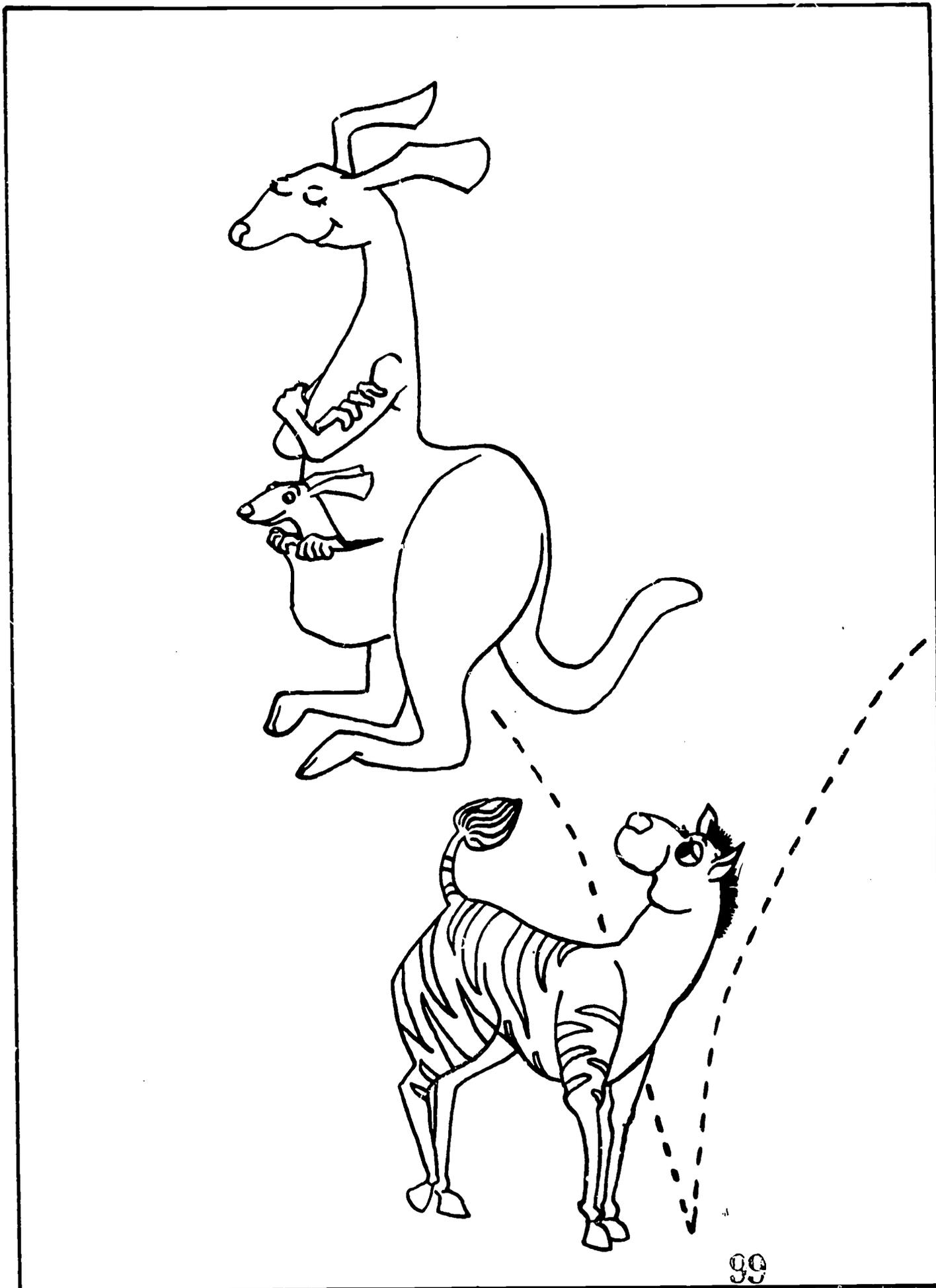


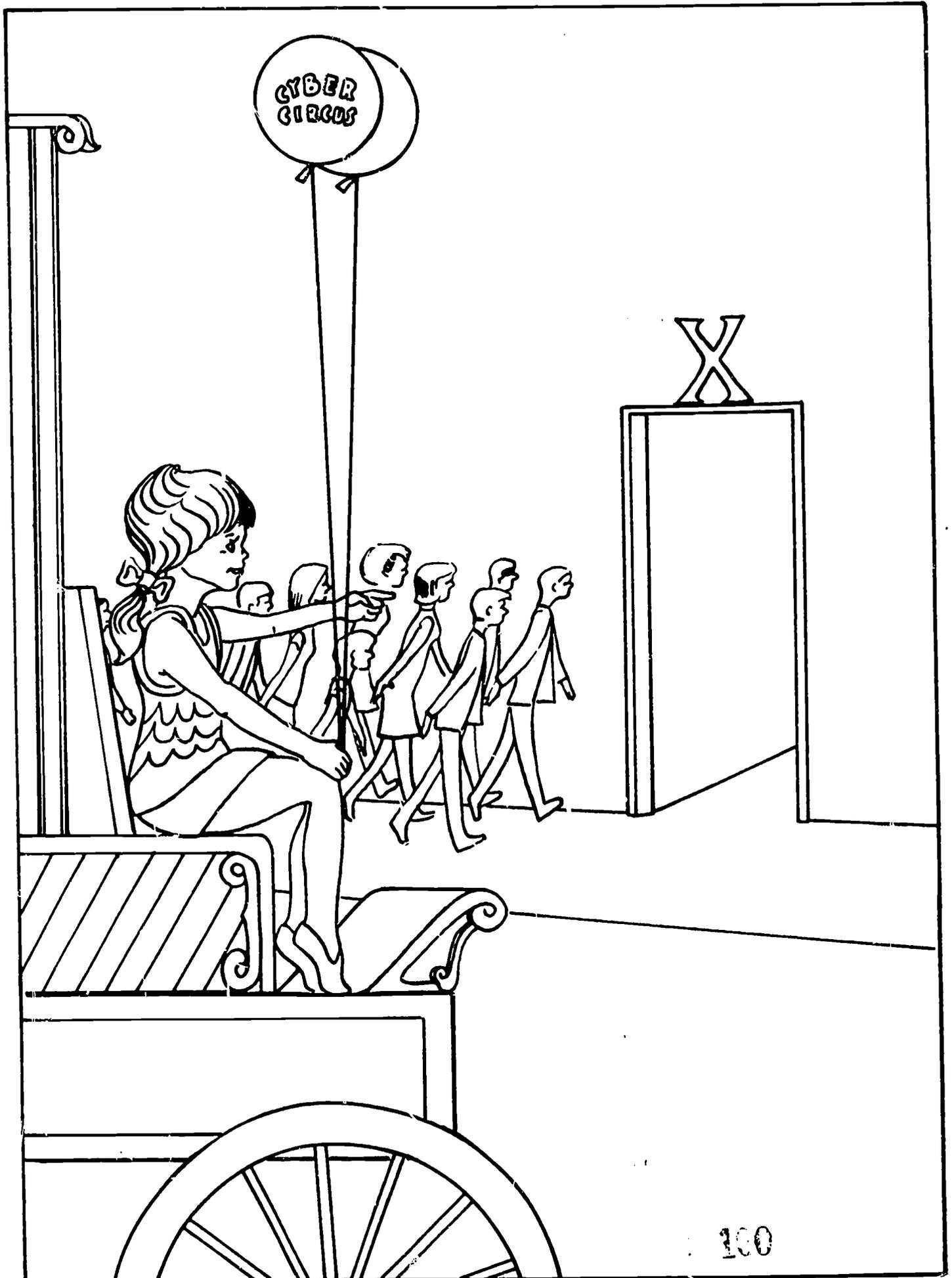












SUPPLEMENTARY MATERIALS

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**COPY AND COMPLETION EXERCISES**

One, two, and three letter words are used in this particular set of copy materials to provide the student with extensive practice on new letters. Word lists are arranged for each letter group in the "Cybertype" code. Each word list employs letters from its letter group and from those groups previously introduced to the student.

Letter Group: E, T, A, O, N, I

A	TEA
I	TOE
AT	TIE
ON	INN
IN	ATE
IT	ONE
NO	TIN
TEN	NON
NOT	TAN
EAT	NET
TON	TEE
OAT	ION

Letter Group: R, S, H, D, C, L, M

DID	DAD
SHE	END
RAN	SEA
AND	SEE
HIT	AIR
HER	RAT
HIS	RED
SAD	MEN
HOT	HEN
MAT	LET
MID	LIE
CAT	CAN
COT	DOC
HAD	HAS
THE	CAR

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Letter Group: U, F, P, Y, B, G, W

bug	pay
mop	ply
bow	pig
pup	bay
rug	fly
pop	run
wee	gum
bop	wig
mug	bum
cup	fun
out	fat
war	pun
pug	got
boy	sun
buy	pat
gay	pry
top	won

Letter Group: V, J, K, Q, Z, X

van	jag
joy	zig
fox	via
eve	zoo
keg	six
jam	jab
vet	ink
box	qua
vim	kit
jig	tax
quo	vat
zip	ave

**Sample Fill-In Exercises**

The following two pages provide examples of fill-in exercises. Similar work sheets may be constructed at your own discretion.

FILL IN THE BLANKS

Example: I ATE AN ONION

I BOUGHT \_\_\_\_\_

I BROUGHT \_\_\_\_\_

I PEELED \_\_\_\_\_

I COOKED \_\_\_\_\_

TYPE THE COLOR WORDS;  
THEN COMPLETE THE SENTENCES.

RED

BROWN

PURPLE

BLUE

GREEN

YELLOW

BLACK

WHITE

ORANGE

WHAT COLOR IS IT?

1. LETTUCE IS \_\_\_\_\_
2. BREAD IS \_\_\_\_\_ OR \_\_\_\_\_
3. BANANAS ARE \_\_\_\_\_
4. BEETS ARE \_\_\_\_\_
5. CARROTS ARE \_\_\_\_\_

**Exercises with Common Letter Groups**

This section provides copy exercises with words and sentences employing common two- and three- letter groups.

PRACTICE ON THE "AND" LETTER GROUP

and	brand	Andy
band	grand	dandy
hand	strand	handy
land	handle	sandy
sand	sandal	candy
wand		andante

Hand Andy and Sandy a handle.

A grand band landed on the sand.

I sand and sand and sand a handle.

Andy has dandy sandals.

PRACTICE ON THE "AT" LETTER GROUP

at	sat	ate
bat	vat	date
fat	brat	fate
eat	spat	gate
hat	flat	late
oat	that	mate
mat	boat	slate
pat	float	plate
rat		berate

I eat.

A cat spat at the rat.

A cat sat in a hat on a mat.

I hate late dates.

PRACTICE ON THE "ING" LETTER GROUP

king	sting	mingle
ring	string	single
sing	thing	tingle
wing	wring	cringe
fling	finger	fringe
bring	singer	

Bring the king a ring.

My ring finger tingles.

Sing, sing, single singer.

The king is singing and ringing a bell.

Let's go sliding and sleigh riding,

singing while we're swinging.

PRACTICE ON THE "TH" LETTER GROUP

than	third	three	earth
thank	thirteen	thrill	fourth
that	thirty	throat	growth
thaw	this	throw	health
then	thistle	thumb	math
thief	Thomas	thunder	path
thick	thorn	Thursday	strength
thimble	though	bath	truth
thin	through	birth	with
thing	tough	both	wrath
think	threat	death	youth

This is that thin thing.

I think this thimble is thicker than  
that thimble.

A thorn in the path threatened the  
growth and health and the strength  
of the youth.

PRACTICE ON THE "THE" LETTER GROUP

the	theory	bathe	mother
theater	therapy	bother	other
thee	there	brother	rather
theft	these	either	smother
their	thesis	ether	weather
them	they	father	whether
then	another	heather	wither

The cat sat in the hat on the mat.

They like the hat of the other brother.

The ant ate the oat in the hat.

Exercises with Poems and Jingles

This section provides poems and jingles for children to copy. Many children find such poems fascinating, and these exercises provide additional practice in producing repetitive letters and words.

LIONS LEAPING LIONS

LEAPING LIONS LEAPING

LEAPING IN THE GRASS

LEAPING HERE LEAPING THERE

B-16

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A MILLION TOMATOES

A MILLION TOMATOES

TOMATOES RED RED RED

I SHALL EAT A RED RED RED  
TOMATO

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A CAT IS A CAT,

IS A CAT, IS A CAT

AND THAT IS THAT, IS THAT

IS THAT IS THAT,

AND THAT IS A CAT,

IS A CAT, IS A CAT,

AND THAT IS THE END OF THAT,

THAT CAT.

A LOOSE TOOTH

IS A SERIOUS MATTER

IN A MEAN ANIMAL.

HE CAN DREAM

A MILLION DREAMS

AND NOT CATCH

A SMALL SMELL OR

TASTE A TENDER MORSEL.

COPY EXERCISES USING COMMON ABBREVIATIONS

MONDAY	MON.
TUESDAY	TUES.
WEDNESDAY	WED.
THURSDAY	THURS.
FRIDAY	FRI.
SATURDAY	SAT.
SUNDAY	SUN.
MARYLAND	MD.
VIRGINIA	VA.
DISTRICT OF COLUMBIA	D.C.
PENNSYLVANIA	PA.
JANUARY	JAN.
FEBRUARY	FEB.
MARCH	MAR.
APRIL	APR.
AUGUST	AUG.
SEPTEMBER	SEPT.
OCTOBER	OCT.
NOVEMBER	NOV.
DECEMBER	DEC.

"CYBERTYPE" WORD LIST

This section provides lists of commonly used words arranged for each letter group in the "Cybertype" code. The order of presentation for letters within each letter group is consistent with the presentation order for letters in the Instruction Manual for 14-key, "Cybertype" dual-input systems. These word lists can readily be used with the 7-key "Cybertype" system, although the presentation order for letters within each letter group differs slightly from that given in this section.

Word lists for each letter are based on other letters in the same group, or on letters in groups previously introduced. After teaching a complete letter group (e. g. , "R, S, C, H, L, D, M"), the word lists for each letter in that series may be used as a source for further practice.

This section is also intended for use in the composition of sentences, and should be particularly helpful in practice and reinforcement of the letter-keying code in the early stages of instruction with the "Cybertype" system.

C

He can catch a cat.

A car can coast.

Cocoa costs ten cents.

Cora can dance the cancan.

A cat can catch a roach.

Richard Rice cheats at cards.

H

She has his hose.

He has thin hair.

He has three shoes.

The hen hit the horse on the shoe.  
(Emphasizing THE)

He harnesses his horse at the station.

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Letter Group: E, O, T, N, A, I

a  
I  
at  
ate  
to  
too  
eat  
tea  
toe  
toot  
an  
neat  
no  
ant  
none  
noon  
not  
on  
note  
teen  
in  
nit  
tie  
ten  
one  
nine  
in  
it  
ion  
iota  
tint  
tent  
ton  
tan  
tin  
nation  
attention

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L

Tell Ellen to call.

A late lad eats less.

Let a child lead the line.

Little Nellie lost her doll.

Tell Tillie a tall tale.

Elsa is a real cool doll.

D

Dad had a red radio.

Hand Dot a dish.

A sad dad had a hot head.

Dad and Ed stand in the sand.  
(Emphasizing AND)

The distant dentist does not season his  
roast hen.

Letter Group: R, S, C, H, L, D, M

R

air  
are  
ear  
enter  
entire  
eraser  
iron  
near  
nor  
or  
rain  
ran  
rat  
roar  
root  
rotten  
tear  
tire  
tore  
torn  
train  
tree

S

also  
as  
easiest  
east  
Easter  
interest  
is  
its  
nearest  
nest  
noise  
nose  
reason  
rest  
rinse  
roast  
rooster  
rose  
sat  
seat  
season  
sea  
see  
seen  
sent  
set  
sir  
siren  
sister  
sit  
snore  
so  
soon  
sore  
stain

stairs  
star  
start  
station  
stone  
store  
street  
taste  
tease  
test  
toast

C

accident  
ace  
ache  
across  
act  
can  
cane  
cannot  
car  
carrot  
card  
care  
case  
cash  
cat  
catch  
cent  
center  
chain  
chair  
chance  
chase  
cheat  
chin  
choice  
choose  
chosen  
coal  
coat  
cocoa  
cone  
corn  
corner  
cost  
cross

dance  
doctor  
each  
ice  
nice  
ocean  
once  
race  
reach  
rice  
rich

*Cybernetics Research Institute*

M

Mom made me a mitten.

I smell some meat.

Tell him to come home.

Tom marched almost ten miles.

Mrs. Moon made creamed meat.

A calm clam came late.  
(Emphasizing C, L, M)

B-37

<u>H</u>		<u>L</u>		<u>D</u>		<u>M</u>	
another	the	all	lesson	ad	radio	am	mine
earth	their	alone	let	add	read	almost	mint
either	then	call	letter	address	red	animal	mirror
hair	there	calm	lie	and	ride	arm	miss
has	these	careless	line	dad	read	came	mom
hat	this	child	lion	dare	rode	chimney	moment
hate	thin	children	listen	date	road	Christmas	month
he	these	chocolate	little	dead	sad	climb	moon
hear	three	circle	load	dear	said	come	more
heart	threat	class	loose	deer	sand	cream	most
heat	tooth	clean	lose	dentist	seed	dime	mother
hen		clear	lost	did	send	dream	Mr.
her		close	lot	die	side	ham	Mrs.
here		cloth	nails	dinner	stand	hammer	name
hi		clothes	old	dirt	stood	him	room
his		cold	real	dish	third	home	same
hit		color	roll	distant	tired	ice cream	seem
horn		cool	sail	do	trade	lemonade	slam
horse		cradle	salt	does	tried	made	small
hose		doll	school	done		mail	smell
hot		dollar	sell	door		mailman	smile
neither		electric	shall	dot		mama	some
north		else	shell	dress		man	sometime
oh		hall	sold	dried		march	stomach
other		hell	soldier	end		matter	storm
rather		hello	steal	had		me	team
share		hill	still	hand		mean	them
she		hold	tail	hard		meat	time
sheet		hole	tall	head		medicine	tomatoes
shine		lace	tell	heard		meet	
shoe		laid	till	hid		melt	
shoot		land	told	hide		men	
short		last		idea		mend	
than		late		indoors		met	
that		later		inside		middle	
		lead		instead		mile	
		learn		need		mill	
		leather		nod		million	
		led		order		mind	

**PRACTICE SENTENCES FOR THE  
U-F-B-P-G-Y-W "CYBERCODE" SERIES**

(Use after the entire series has been introduced)

U

Stu could use us.

The nurse rushed us out.

Cut a rut under our cute house.

Uncle Curt runs around our church each hour.

Let us discuss musical matters.

F

A fat father fans his face.

Find a foot of felt.

Flat feet often fall.

Find Fran a full loaf.

I fear a fish fell off the roof.

Letter Group: U, F, B, P, G, Y, W

U

about  
aloud  
around  
aunt  
cause  
church  
circus  
cloud  
clue  
count  
course  
cousin  
cruel  
cure  
curtain  
cushion  
cut  
cute  
discuss  
dust  
hour  
house  
hundred  
hunt  
hurt  
lettuce  
loud  
lunch  
measure  
minute  
mountain  
mouse  
mouth  
much  
muscle

F

afraid  
after  
afternoon  
calf  
careful  
chief  
different  
face  
fair  
fall  
fan  
far  
farm  
farmer  
fast  
fat  
father  
fear  
feather  
feed  
fell  
felt  
fence  
field  
fill  
find  
fine  
finish  
fire  
first  
fish  
fit  
flies  
float  
floor

B

automobile  
babies  
baby  
bad  
ball  
balloon  
banana  
band  
barn  
bat  
bath  
bathe  
be  
beans  
bear  
beat  
beautiful  
because  
bed  
bee  
been  
beer  
before  
behind  
bell  
bend  
beside  
best  
better  
bicycle  
bill  
bird  
birthday  
bit  
bite

*Cybernetics Research Institute*

B

Boy babies bite better.

Bill built a blue boat.

Baby Bess bit her rubber rabbit.

Bob rubbed his bruised bottom.

Beer and beans made Mable burp.

P

Pat planted peas in a pot.

Please pass Paul a pail of paint.

Peter sleeps up on top of a piano.

Pam helped Pat peel potatoes.

Pop slipped and dropped his piece of  
apple pie.

Cybernetics Research Institute

U

music  
muss  
must  
number  
nurse  
nut  
our  
out  
outdoors  
outside  
round  
ruin  
run  
rush  
should  
shoulder  
shut  
sound  
south  
such  
suit  
summer  
sun  
sure  
thousand  
touch  
true  
turn  
turtle  
uncle  
under  
until  
us  
use

F

food  
foot  
for  
forth  
found  
four  
free  
fresh  
fried  
friend  
from  
front  
fruit  
full  
fur  
furniture  
half  
herself  
himself  
if  
leaf  
left  
life  
lift  
of  
off  
office  
often  
roof  
self  
soft

B

bleed  
bless  
blood  
blue  
board  
beat  
body  
bone  
born  
both  
bottom  
boy  
branch  
bread  
broom  
brother  
brush  
build  
built  
bumblebee  
bump  
burn  
burnt  
burp  
bus  
busy  
but  
butcher  
butter  
butterfly  
button  
buy  
by  
double  
habit  
lamb  
rabbit  
remember  
ribbon  
rob

robin  
rub  
rubber  
table  
thumb  
tub  
umbrella

*Cybernetics Research Institute*

G

Go get a big bag.

A big ugly pig got angry.

Eggs get bigger in spring.

Gail Higger gets green grape gum.

Angry angels fight grog and eggnog.

Y

Sally yells all day.

Fay can only pay a penny.

Dirty dry crayons made Mary cry.

If you do not pay today you may be sorry.

My city already has a candy company.

W

How now brown cow.

Wild winter winds blow.

We will wash with water.

Willie wants to win a new watch.

Wanda wore a yellow wool wig.

P

airplane  
apple  
camp  
cap  
captain  
cup  
cupboard  
deep  
dope  
drop  
elephant  
help  
hop  
hope  
lamp  
lap  
leap  
lip  
nap  
open  
pail  
pain  
pair  
pal  
pan  
pants  
papa  
paper  
parade  
parents  
part  
pass  
past  
paste  
pat  
path  
peach  
peas  
peel  
piano  
picnic  
picture  
pie  
piece  
pin  
pipe  
place  
plain  
plant  
plate  
please  
point  
pond  
policeman  
poor  
pop(corn)  
porch  
post  
pot  
potatoes  
pound  
press  
pull  
put  
shape  
sheep  
ship  
shop  
sleep  
slip  
soap  
space  
spoon  
spot  
spread  
step  
stop  
supper

G

again  
against  
age  
ago  
along  
angel  
angry  
anything  
bag  
bandage  
began  
begin  
begun  
belong  
big  
bought  
bright  
bring  
brought  
building  
bug  
change  
cough  
danger  
dig  
dining  
dog  
drug  
edge  
egg  
eight  
engine  
enough  
fight  
finger  
flag  
forget  
forgot  
frog  
gate  
get  
ghost  
gift  
giraffe  
girl  
glad  
glass  
go  
goat  
goes  
going  
gold  
golden  
gone  
good  
goodbye  
gorilla  
got  
grade  
grain  
grandfather  
grandmother  
grape  
grass  
gray  
great  
green  
grocery  
ground  
guess  
guest  
gum  
hang  
high  
hung  
hungry  
large  
laugh  
neighbor  
night  
nothing  
orange  
page  
pig  
rag  
right  
ring  
rug  
sign  
something  
song  
spring  
sting  
straight  
string  
strong  
sugar  
though  
thought  
through  
together  
tongue  
tough  
ugly

PRACTICE SENTENCES FOR THE  
V-J-Q-K-Z-X "CYBERCODE" SERIES

(Use after entire series has been introduced)

V

I shave every evening.

Brave beavers love to dive.

Give Victor five heavy gloves.

Eve and Harv have every vote.

I have never lived over a valley.

J

Jane just jumped.

Jolly Jimmy enjoys jam and jelly.

John juggles juicy objects.

Major Johnson joined a banjo band.

Q

Quit quarreling and be quiet.

The quiet queen requires a quilt.

Form a square quickly and quietly.

A squirrel squeaked and squirted squash.

*Cybernetics Research Institute*

P

pen  
pencil  
people  
pet

suppose  
surprise  
top

G

gallon  
game  
garage  
garden  
gas

leg  
light  
long  
might  
morning

B-28

129

*Cybernetics Research Institute*

K

Jack took his bike back.

Kate kissed her black kitten.

I like to bake cakes and cookies.

Dick picked a peck of pickles.

Z

Bees buzz and zoom lazily.

I need a dozen large size zippers.

The zebra waltzed with the fuzzy bear.

In winter Suzie wheezes and sneezes and freezes.

X

Fix a box for the fox.

Rex will be six next week.

I see six taxis at the next exit.

An anxious axman expects a maximum of  
sixteen.

Y

already  
any  
candy  
city  
company  
copy  
country  
crayons  
cry  
day  
dirty  
dry  
early  
easy  
empty  
eye  
family  
fly  
funny  
happy  
hurry  
lady  
lay  
many  
may  
money  
my  
myself  
only  
party  
pay  
penny  
play  
pony  
pretty  
puppy  
ready  
say  
silly

today  
toys  
try  
way  
yard  
year  
yes  
yesterday  
yet  
yell  
you  
sorry  
stay  
story  
they  
thirsty

W

allow  
always  
answer  
away  
awful  
between  
blow  
bow  
bowl  
brown  
clown  
cow  
crowd  
crown  
down  
draw  
drawer  
fellow  
few  
flower  
follow  
grew  
grow  
how  
low  
new  
now  
own  
pillow  
row  
sandwich  
saw  
sew  
shadow  
show  
slow  
snow  
sweat  
sweater

towel  
town  
twelve  
twenty  
two  
wagon  
wait  
wall  
want  
war  
warm  
was  
wash  
waste  
watch  
water  
we  
wear  
weather  
wedding  
well  
went  
were  
west  
wet  
what  
wheat  
wheel  
when  
where  
whether  
which  
while  
whisper  
white  
who  
whole  
whom  
whose

will  
win  
wind  
window  
wing  
winter  
wish  
witch  
with  
without  
woman  
women  
wonder  
wood  
wool  
word  
wore  
world  
worry  
would  
wrap  
write  
wrong  
yellow  
sweep  
sweet  
throw  
tomorrow  
why  
wide  
wig  
wild

TOPICS FOR CREATIVE WRITING

(Note: Suggest these topics only after all letters, symbols, and functions in the "Cybercode" have been introduced).

Letter Group: V, J, Q, K, Z, X

V

above  
alive  
believe  
brave  
cover  
dive  
drove  
eleven  
evening  
ever  
every  
everything  
five  
gave  
give  
glove  
have  
heavy  
leave  
leaves  
live  
love  
move  
never  
over  
overalls  
prove  
river  
save  
serve  
seven  
several  
shave  
shiver  
stove  
twelve

J

jail  
jam  
jar  
jelly  
job  
join  
joy  
jump  
just  
pajamas

Q

quack  
quarrel  
quarter  
queen  
question  
quick  
quiet  
quite  
square  
squash  
squeak  
squirrel  
squirt

*Cybernetics Research Institute*

Once there was a little boy who loved (popsicles) . . .

One day when Bobby got home from school he found an  
enormous \_\_\_\_\_ on the doorstep . . .

Once upon a time there was a family of purple cater-  
pillars . . .

Once I found . . .

Once a \_\_\_\_\_ lived deep in the woods . . .

Once in a far away land . . .

Once upon a time long, long ago . . .

Deep in the jungle, on the top of a great big tree . . .

Cybernetics Research Institute

K

ask  
awake  
awoke  
back  
bark  
basket  
beak  
bike  
black  
blackboard  
book  
break  
breakfast  
brick  
broke  
cake  
check  
cheek  
chicken  
clock  
cook  
cookie  
crackers  
creek  
dark  
drink  
duck  
fake  
fork  
handkerchief  
joke  
keep  
kept  
key  
kick  
kill  
kind  
king

kiss  
kitchen  
kitten  
knee  
knew  
knife  
knock  
know  
lake  
like  
lock  
look  
make  
mark  
market  
milk  
monkey  
napkin  
neck  
nickle  
park  
peck  
pick  
pickle  
pocket  
rock  
sack  
shake  
shook  
sick  
silk  
skates  
skin  
skirt  
sky  
smoke  
snake  
socks  
speak

Z

spike  
spoke  
steak  
stick  
stocking  
strike  
suck  
take  
talk  
thank  
Thanksgiving  
thick  
ticket  
took  
truck  
wake  
walk  
week  
work

breeze  
buzz  
crazy  
dozen  
freeze  
frozen  
fuzzy  
jazz  
lazy  
prize  
puzzle  
quiz  
raze  
size  
sneeze  
waltz  
zebra  
zero  
zipper  
zoo  
zoom

X

axe  
box  
except  
excited  
expect  
exit  
fix  
fox  
mix  
next  
six  
taxi

PERSONAL TOPICS FOR  
ORIGINAL WRITING

My friends . . .

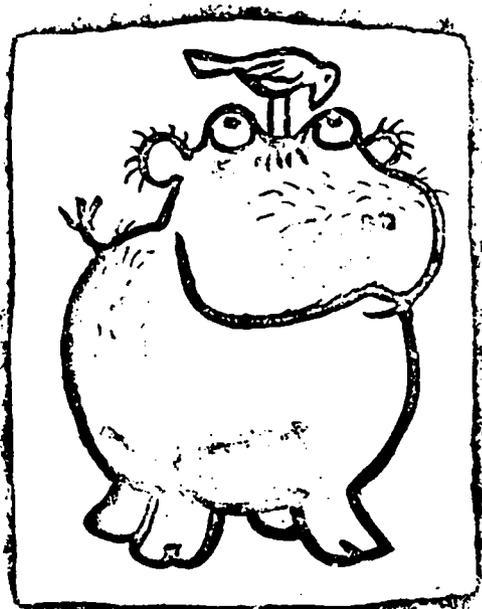
My family . . .

My favorite things . . .

My favorite foods . . .

Me . . .

WRITE A STORY.



B-46

"CYBERTYPE" PRACTICE SENTENCES

The following sentences are designed to emphasize and reinforce the learning of newly introduced letters. For each letter (with the exception of E, O, T, N, A, I), there are at least four sentences, each sentence using the pertinent letter a minimum of three times, and using with it only those letters from the same "Cybertype" letter group previously introduced.

To further supplement your activities, you may want to compose similar sentences by referring to the "'Cybertype' Word List" in the preceding section.

Note: Where possible, emphasis should be placed on the development of student creativity by encouraging students to compose their own sentences with their "Cybertype" systems, using the sentences in this section as models.

**PRACTICE SENTENCES FOR THE  
E-O-T-N-A-I "CYBERCODE" SERIES**

(Use after entire series has been introduced)

E, O, T, N, A, I

I ate at ten.

I eat one onion.

An ant ate an oat.

At noon I eat in a tent.

A neat teen ate a tan onion in a tin.

I note a nation at attention.

WRITE A STORY.



B-47

PRACTICE SENTENCES FOR THE  
R-S-C-H-L-D-M "CYBERCODE" SERIES

(Use after the entire series has been introduced)

R

A rear tire tore.

A rat ran under a tree.

Aaron ran near a train.

An iron train ran into a rotten tree root.

I enter an eerie terrain.

S

Teens sit on seats.

Toss Rose a stone.

Roast toast is in season.

Sara Stasson stores onions in a stone seat.

A senior senator starts a sensation.

*Cybernetics Research Institute*

Imagine . . .

a green froggy all soggy

a sleepy sloth waked by a moth

a turtle gruff in a huff

playing in the hay today

having peanut butter on your shutter

a hug from a bug

Use your imagination to "Cybertype" a story about one of the above topics.

*Cybernetics Research Institute*

Imagine that the following things have happened to you.  
Tell what you did.

What happened when you clucked at a duck?

What happened when you bonged on a gong?

What happened when you slipped on a ship?

What happened when you got muddy with a buddy?

*Cybernetics Research Institute*

What would we see if . . .

we visited the zoo?

we went to a farm?

we went to a supermarket?

we went to a theater?

we toured an art museum?

we went to school?

we went to the beach?

we visited your house?

B-50

*Cybernetics Research Institute*

What would happen if . . .

everyone in the classroom talked at once?

the clock in your house didn't work?

you left a dog and some hamburger alone in  
the same room?

someone brought a little snowman into the  
room and set it on his desk?

everything fell up instead of down?

the bell at the end of your recess period didn't  
ring?

the sun continued to shine all night long?

CREATIVE ANSWERS

Think of and list 5 things you could do with . . .

a paper napkin

clothespins

a long piece of wire

a catalog

a wash cloth

a big box

a tiny box

toothpicks

a magazine

an old plastic tablecloth

a twig

a hook

a piece of rope

a paper clip

empty orange juice cans

marshmallows

CREATIVE ANSWERS

List all the things you can wear on your hands.

List all the things you can wear on your feet.

List all the things you can think of that are red.

List all the things you can think of that are hot.

List all the things you can think of that are shaped like a triangle.

List all the things you could do with your nose.

*Cybernetics Research Institute*

LANGUAGE BUILDING EXERCISES

(Note: These exercises should be used only after children have learned the entire letter-keying code).

B-54

155

SYNONYMS

Synonyms are words that have the same meaning.

Type these sentences using a synonym for the underlined word.

Example: That woman is my mother.

Answer: That lady is my mother.

1. I gave the letter to the postman.
2. My dad went to work.
3. Joe cannot find his galoshes.
4. The lad is ten years old.
5. The sunset was pretty.
6. The puppy ran across the street.
7. The bird flew toward the nest.

ANTONYMS

Antonyms are words that have opposite meanings.

Here is a list of paired words. Some are opposites (antonyms) and some are not. Choose the antonym word groups and type them.

Example: work, play  
Answer: work, play

Example: tiny, wee  
Answer: (do not type anything)

1. hot, cold
2. fish, feet
3. big, little
4. fast, slow
5. fun, games
6. angry, happy
7. cry, weep
8. white, black
9. dry, wet
10. all, none

HOMONYMS

Homonyms are words that sound alike.

Type the words that sound alike in each set.

Example: bore, born, boar

Answer: bore, boar

1. fur, for, four
2. your, our, hour
3. to, toe, two
4. mane, main, mean
5. soar, sour, sore
6. so, sew, sue
7. sun, sin, son
8. at, ate, eight
9. see, so, sea
10. scene, son, seen

*Cybernetics Research Institute*

How many words can you type  
using only the letters in the  
word DICTIONARY?

Type them. (You may use  
the same letter more than  
once.)

*Cybernetics Research Institute*

How many words can you type  
using only the letters in the  
name CHARLIE BROWN?

Type them. (You may use  
the same letter more than  
once.)

*Cybernetics Research Institute*

Which month is it?  
(Type your answer.)

January

February

March

April

May

June

July

August

September

October

November

December

---

How many words can you type using only  
the letters in the name of this month?  
Type them.

B-60

COMPLETE THE RHYMES

ON THIS PAGE

Worms wiggle.  
Girls \_\_\_\_\_.

Sheep sleep.  
Lions \_\_\_\_\_.

I climb a tree  
To see the \_\_\_\_\_.

He will float  
Beside the \_\_\_\_\_.

I sat on a ledge  
To cut the \_\_\_\_\_.

He sat still  
As he rode down the \_\_\_\_.

I have a rock  
In my \_\_\_\_\_.

I like jam  
With my \_\_\_\_\_.

See the locks  
On the \_\_\_\_\_.

It has a crack  
In \_\_\_\_\_.

Quick kittens  
With muddy \_\_\_\_\_.

It was a joy  
To see the \_\_\_\_\_.

WORD BUILDING EXERCISES

Form words by using the following letters to fill in the blanks.

t n r s h d c l m

\_in

\_at

\_ate

\_in

\_at

\_ate

\_ain

\_an

\_oat

\_ain

\_an

\_oat

\_ot

\_eat

\_ean

\_ot

\_eat

\_ean

\_one

\_am

\_eam

\_one

\_am

\_eam

COMPLETION EXERCISES

Complete the last word in each line, and type the sentences.

1. Mother has a pretty r \_\_\_\_\_.
2. Bob plays with his d \_\_\_\_\_.
3. Susan can read a b \_\_\_\_\_.
4. Tom works with a s \_\_\_\_\_.
5. Jack wants a b \_\_\_\_\_.
6. Larry rides in a c \_\_\_\_\_.
7. Tom can fly his k \_\_\_\_\_.

"B" WORDS

Arrange and type these words in alphabetical order.

bike

bird

barn

ball

bai

bear

book

bed

Copy these sentences; fill in the missing words from the list above.

1. You sleep in a \_\_\_\_\_.
2. Cows live in a \_\_\_\_\_.
3. You read a \_\_\_\_\_.
4. You may find a \_\_\_\_\_  
in the zoo.
5. You hit a ball with a \_\_\_\_\_.
6. The boy rides his \_\_\_\_\_.
7. A \_\_\_\_\_ can fly.

"K" WORDS

Think of a word that begins with "K", and type your answer.

1. It is a girl's name. \_\_\_\_\_
2. It can fly high on a windy day. \_\_\_\_\_
3. It is soft and small. \_\_\_\_\_
4. It can jump very far. \_\_\_\_\_
5. You can unlock a door with it. \_\_\_\_\_

"L" WORDS

Type only the names of things that grow, choose them from this list.

leaf

letter

laugh

lamp

lock

lamb

light

lion

leg

"L" WORDS

Type only the names of things that grow, choose them from this list.

leaf

letter

laugh

lamp

lock

lamb

light

lion

leg

What goes with this word?

shoes

bread

mother

sister

hot

sun

fork

bacon

cat

cake

work

NUMBERS AND MATH SYMBOLS

(Note: These exercises are to be used only after students have learned the entire letter-keying "Cybercode.")

Cybernetics Research Institute

1. Number Practice

1	2	3	4	5	6	7	8	9	10
10	20	30	40	50					
60	70	80	80	100					
91	28	73	46	50					
1950	1960	1970							

2. Number Sentences

1 and 1 are \_\_\_\_\_

2 plus 3 is \_\_\_\_\_

4 minus 2 is \_\_\_\_\_

Today is \_\_\_\_\_  
month day year

Count to ten:

— — — — — — — — — —

ADDITION:

$1 + 1 = \underline{\quad}$

$1 + 2 = \underline{\quad}$

$2 + 2 = \underline{\quad}$

$3 + 4 = \underline{\quad}$

$3 + 3 = \underline{\quad}$

$5 + 6 = \underline{\quad}$

$4 + 4 = \underline{\quad}$

$7 + 8 = \underline{\quad}$

$5 + 5 = \underline{\quad}$

$9 + 10 = \underline{\quad}$

$6 + 6 = \underline{\quad}$

$7 + 7 = \underline{\quad}$

$8 + 8 = \underline{\quad}$

$9 + 9 = \underline{\quad}$

$10 + 10 = \underline{\quad}$

SUBTRACTION:

$6 - 5 = \underline{\quad}$

$8 - 3 = \underline{\quad}$

$7 - 3 = \underline{\quad}$

$9 - 2 = \underline{\quad}$

$7 - 5 = \underline{\quad}$

$3 - 3 = \underline{\quad}$

$9 - 8 = \underline{\quad}$

$24 - 24 = \underline{\quad}$

$24 - 20 = \underline{\quad}$

$24 - 4 = \underline{\quad}$

$268 - 268 = \underline{\quad}$

$268 - 0 = \underline{\quad}$

$3895 - 1 = \underline{\quad}$

MULTIPLICATION:

$3 \times 4 = \underline{\quad}$

$6 \times 4 = \underline{\quad}$

$7 \times 3 = \underline{\quad}$

$4 \times 5 = \underline{\quad}$

$2 \times 8 = \underline{\quad}$

$3 \times 8 = \underline{\quad}$

$5 \times 1 = \underline{\quad}$

$5 \times 7 = \underline{\quad}$

$6 \times 6 = \underline{\quad}$

$7 \times 4 = \underline{\quad}$

$9 \times 5 = \underline{\quad}$

$2 \times 3 = \underline{\quad}$

DIVISION:

$10 \text{ d } 5 = \underline{\quad}$

$8 \text{ d } 4 = \underline{\quad}$

$9 \text{ d } 3 = \underline{\quad}$

$12 \text{ d } 3 = \underline{\quad}$

$21 \text{ d } 7 = \underline{\quad}$

$15 \text{ d } 3 = \underline{\quad}$

$32 \text{ d } 4 = \underline{\quad}$

$4 \text{ d } 1 = \underline{\quad}$

$20 \text{ d } 5 = \underline{\quad}$

MATH PRACTICE:

$2 + 4 = \underline{\quad}$

$3 + 7 = \underline{\quad}$

$10 + 5 = \underline{\quad}$

$4 \times 2 = \underline{\quad}$

$6 \times 3 = \underline{\quad}$

$29 \times 1 = \underline{\quad}$

$32 - 2 = \underline{\quad}$

$49 - 9 = \underline{\quad}$

$26 - 6 = \underline{\quad}$

$6 \text{ d } 3 = \underline{\quad}$

$10 \text{ d } 2 = \underline{\quad}$

$16 \text{ d } 4 = \underline{\quad}$

$$\begin{array}{r} 25 \\ +33 \\ \hline \end{array}$$

$$\begin{array}{r} 400 \\ +200 \\ \hline \end{array}$$

$$\begin{array}{r} 444 \\ -222 \\ \hline \end{array}$$

$$\begin{array}{r} 869 \\ -634 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 1 \\ \hline \end{array}$$

*Cybernetics Research Institute*

Place the Correct Math Symbol in the Circle:

2  2 = 4

6  1 = 7

10  9 = 1

8  4 = 2

3  4 = 12

10  1 = 11

7  5 = 2

24  24 = 0

5  6 = 11

14 + 0  14

15  5 = 3

9 + 2  11

LETTERS, PUNCTUATIONS,  
AND NUMERALS

INTEGRATION EXERCISES

The copy exercises on the following pages employ all the functions taught in the "Cybertype" code. Each function is used at least twice, while the more common functions are used repeatedly.

*Cybernetics Research Institute*

eotnai            rschldm            ufbpgyw            vjqkz.x

(Sp)ruv            esfj            ocbq            thpk

nlgz            ady.            imwx

1234            4321            567            765            890            098

0 1 2 3 4 5 6 7 8 9 10

5            24            361            7000            89

/ ? ' " ; : !            ? ! " ; / : '

= + - \_ x d            .. + - =

*Cybernetics Research Institute*

Isn't Joe's dog lost ?

Aunt Mary said, "Happy Birthday!"

Twenty-three men, women, and children came to the party.

$342 - 342 = 0$

Men landed on the moon on 7/19/69.

The electric lamp was invented January 27, 1880, by

Thomas A. Edison.

$10 + 2 = 12$ ;  $11 + 1 = 12$

The quick king waltzes very exuberantly.

Dear Sir :

Cybernetics Research Institute

Shopping List:

2 loaves of bread

3 boxes of cereal

4 quarts of milk

5 bananas

6 eggs

7 slices of ham

8 oranges

*Cybernetics Research Institute.*

I have chocolate, vanilla, and strawberry;  
which do you want?

Do you want nuts too?

Yes, please.

Thank you, Mrs. Sands.

*Cybernetics Research Institute*

This is another way to write a date. It is shorter and uses only numerals.

Using January 26, 1972 as an example, follow Steps 1 through 5 to write it the short way on your 'Cybertype.'

Step 1: January is the first month; call it "1."

Step 2: Make a slash.

Step 3: Put the numeral date of the month (26).

Step 4: Make another slash.

Step 5: Then type the last 2 digits of the year (72).

Answer: 1/26/72

How would you write February 14, 1965, the short way?

Type today's date the short way.

Type your birthday this way, too.

*Cybernetics Research Institute*

I am thirsty.

May I have a glass of water?

Thank you, Mother.

*Cybernetics Research Institute*

What did Debbie have in her purse ?

She had 2 combs, a mirror, 7 bobbi pins,  
6 tissues, and 45 cents.

*Cybernetics Research Institute*

I can't do that.

Don't touch the hot pot.

"I'm ready," said John.

"Ouch!" yelled Sally.

*Cybernetics Research Institute*

= - ' , / + \_ " , ? ! ! !

Will you please open the door ?

"I'm ready."

Thank you, Dad.

Hi, Cathy!

Nov. 23, 1970: 11/23/70

My brother is twenty-one!

B-85

187

*Cybernetics Research Institute*

"Hello, John!" called Randy.

"How about playing ball?"

John said, "I'd like to, but I can't right now."

B-86

188

*Cybernetics Research Institute*

"Which is blue? Joe's book, Mary's pencil, Judy's paper, or Bob's ruler?" asked Miss Mann.

"Bob's ruler!" answered Sue.

"My book is green," said Joe.

*Cybernetics Research Institute*

**Dear Sir:**

**This is not the doll that I  
ordered. Please send the one that  
has red hair.**

**Thank you.**

**Sincerely,**

**B-88**

**190**

*Cybernetics Research Institute*

Dear Sir:

This is not the car that I ordered.

Please send the red one that costs  
ninety cents.

Thank you.

Sincerely,

B-89

191

*Cybernetics Research Institute*

FREQUENTLY USED TWO AND THREE  
LETTER SEQUENCES AND WORD EXERCISES

(These exercises should be used only  
after the entire "Cybercode" has been introduced)

The following word lists and practice exercises were developed for use in learning some of the basic phonetic components of words. They include such constructions as frequently used two and three letter sequences, prefixes and suffixes.

Practice with these exercises will not only increase the student's knowledge of and alertness to common phonetic components of the English language, but will also increase his proficiency on the "Cyber-type." The letter groups mentioned herein occur frequently in written language. Practice in typing them can increase accuracy in typed communications by developing skill in the production of commonly occurring letter sequences.

In addition to providing the instructor with extensive word lists employing the above, this section also includes examples of exercises in which the student can use these letter groups to construct words, produce rhyming words, and compose short sentences. To supplement the above, you may choose to construct exercises similar to those included within this section.

WORD LIST

Based on Commonly Used Two-Letter Sequences

<u>an</u>	<u>ar</u>	<u>as</u>	<u>at</u>	<u>bl</u>
band	bar	ask	battle	black
can	card	task	cat	blur
dandy	ear	gas	eat	blimp
fan	jar	has	fat	blot
man	mar	was	hat	blast
panda	oar	mass	mat	blink
ran	par	last	Patty	bleed
sandal	tart	sassy	rats	blue
tanning	ware	grass	sat	blood
van	hard	waste	sat	bleek
wander			vat	block
angry			that	
angle			what	
ant			ate	
<u>br</u>	<u>ch</u>	<u>cl</u>	<u>cr</u>	<u>de</u>
brown	chair	clear	creep	hidden
brush	chap	cloud	crawl	tide
broil	chain	clown	cradle	dead
brew	choke	clap	crash	decide
breed	chope	clip	crept	deal
brine	chop	clock	cream	depart
brisk	chum	close	creek	made
bracket	chow	clans	cringe	idea
brace	chore	class	crab	deck
	cheer	claw	crab	deck
	cheap	clean		deep
				side

Cybernetics Research Institute

dr

draw  
dry  
drip  
drawn  
drizzle  
drab  
drop  
drug  
drown  
drum  
drink

dw

dwelt  
dwindle  
dwarf  
dwelt  
dweller

ea

each  
eager  
peach  
meat  
heat  
eat  
neat  
beach  
beat  
early  
earn  
earth  
tea  
hear  
head  
east

ed

fed  
led  
Ted  
red  
wedding  
begged  
looked  
edit  
ediface

en

dent  
hen  
mend  
pen  
pencil  
ten  
tent  
tend  
enemy  
even

er

her  
here  
per  
era  
erg  
ere  
error  
ever  
every  
very  
seer  
maker

es

best  
essay  
mess  
pest  
horses  
porches  
lesson  
test  
press  
less  
guess

fl

fly  
fling  
flip  
flap  
flour  
flag  
flat  
flame  
flesh  
flea

fr

fry  
fringe  
freeze  
froze  
free  
fruit  
frail  
fret  
frog  
frost

gl

glass  
gleam  
glare  
glaze  
glue  
glum  
glory  
glimmer  
gland  
wiggle

Cybernetics Research Institute

gr

grip  
grill  
grab  
grin  
grape  
greet  
gray  
green  
grease  
gripe

ha

had  
have  
hand  
having  
shad  
hamper  
shall  
aha  
hall  
hair  
has

he

he  
she  
the  
they  
them  
there  
then  
other  
brother  
here  
her  
head  
hero  
help

in

in  
into  
hinder  
ginger  
fin  
mind  
win  
tin  
pinned  
binge

io

portion  
elevation  
traction  
action  
section  
attention  
diction  
friction  
intention  
fraction

is

his  
miss  
sister  
dislike  
list  
mist  
mister  
hiss  
listen  
isle  
this  
iris  
is

it

it  
hit  
bite  
smith  
kitten  
sit  
lit  
fitted  
write  
write  
itself  
itch  
edit

le

apple  
isle  
lent  
let  
ale  
leader  
puzzle  
letter  
leap  
lean  
leg  
left  
lei

nd

and  
handle  
band  
candy  
mend  
tend  
end  
landing  
send  
fund

nk

ink  
think  
thank  
rink  
pink  
stink  
rank  
dunk  
skunk  
mink  
link

Cybernetics Research Institute

<u>nt</u>	<u>of</u>	<u>on</u>	<u>or</u>	<u>ou</u>
ant	of	on	or	ouch
antler	often	onto	nor	our
tent	lofty	one	tore	hour
lent	soft	ton	sore	sour
pan <sup>t</sup>	offer	bone	bore	touch
rant	coffee	onion	for	pouch
mint	toffee	tone	orator	four
went	off	only	organ	pour
month	oftentimes	Monday	poor	out
tint	aloft	cone	forty	your
		once	oral	you
			ore	oust

<u>ph</u>	<u>pl</u>	<u>pr</u>	<u>re</u>	<u>rt</u>
telephone	place	pretty	are	tart
photo	please	present	red	mart
physician	plot	prepare	read	part
physics	apple	prep	ready	start
phonetics	plead	prefix	prepare	flirt
lymph	pleat	prof	treat	cart
phrase	plate	prosper	pretty	dirt
physical	plant	preview	real	shirt
phlox	plaid	prepaid	rare	heart
phosphate	plenty	precede	mare	curt

<u>sh</u>	<u>sk</u>	<u>sl</u>	<u>sm</u>	<u>sp</u>
ship	skate	slip	smear	spell
shall	skip	slide	small	spurt
hush	sky	slap	smart	lisp
sheep	skin	slur	smile	sport
shake	skill	sleep	smack	spring
mush	skirt	slight	smug	spry
shape	skit	slim	smoke	speak
sharp	ski	slumber	smuggle	sprout
shave	skim	slosh	snock	spool
share	skull	isle	smell	wasp
shell	ask		chism	clasp

Cybernetics Research Institute

st

stay  
stem  
steer  
street  
string  
stung  
strip  
last  
waste  
style  
first

sw

swam  
swim  
sway  
swing  
sweet  
sweep  
swell  
swift  
swat  
answer

th

the  
them  
then  
there  
their  
they  
other  
thing  
think  
that  
with  
this

ti

tin  
till  
until  
time  
tip  
tight  
tire  
tide  
tick  
ting  
untie

to

to  
into  
ton  
tough  
tote  
too  
onto  
torch  
total  
tore  
toll  
atop

tr

try  
trip  
treat  
trim  
trust  
troll  
trend  
travel  
trill  
trial  
tray  
entry

tw

tweed  
twice  
twig  
twin  
twist  
twelve  
twitch  
twine  
tweezers  
twitter  
twilight

ve

have  
brave  
love  
wave  
save  
dove  
vend  
veteran  
vex  
vector  
vermin  
alive

wh

when  
where  
what  
why  
while  
white  
which  
wheel  
whisper  
whether

FOUR-LETTER WORD LISTS

Based on Commonly Used Three-Letter Sequences

<u>ack</u>	<u>ake</u>	<u>alk</u>	<u>all</u>	<u>alt</u>	<u>and</u>	<u>ane</u>	<u>ang</u>	<u>ank</u>
back	bake	balk	ball	halt	band	bane	bang	bank
tack	cake	calk	call	malt	land	cane	fang	lank
lack	fake	talk	fall	salt	sand	mane	hang	rank
rack	lake	walk	gall	alto	wand	pane	gang	sank
pack	make	Salk	hall		hand	sane	rang	tank
	rake		mall			vane	sang	
	sake		tall					
	take							
	wake							

<u>ash</u>	<u>ast</u>	<u>ate</u>	<u>eak</u>	<u>eam</u>	<u>ean</u>	<u>eap</u>	<u>ear</u>	<u>eat</u>
bash	cast	bate	beak	beam	bean	leap	bear	beat
cash	fast	date	leak	team	lean	heap	dear	feat
dash	last	fate	peak	seam	mean	reap	fear	heat
lash	mast	gate	t'cak	ream	wcan	neap	gear	meat
mash	past	hate	weak		dean		hear	neat
rash	vast	late					lear	peat
sash		mate					near	seat
		rate					rear	
							sear	
							tear	
							wear	
							year	

Cybernetics Research Institute

<u>een</u>	<u>eep</u>	<u>eet</u>	<u>elt</u>	<u>ent</u>	<u>ill</u>	<u>ine</u>	<u>ing</u>	<u>ink</u>
been	beep	beet	belt	bent	fill	dine	bing	link
seen	deep	feet	felt	cent	gill	fine	ding	mink
teen	keep	meet	melt	dent	hill	line	king	pink
keen	peep	keet	pelt	gent	kill	mine	ping	rink
	seep		welt	lent	mill	pine	sing	sink
				pent	pill	tine	wing	wink
				rent	sill	vine	zing	inky
				sent	will	wine		
				tent	bill			
				vent				
				went				

<u>ite</u>	<u>oat</u>	<u>ock</u>	<u>ome</u>	<u>one</u>	<u>ope</u>	<u>ore</u>	<u>ote</u>	<u>own</u>
bite	boat	cock	come	done	cope	bore	note	down
cite	goat	dock	dome	lone	dope	core	rote	town
kite	coat	lock	home	bone	lope	fore	tote	gown
mite	moat	mock	some	gone	mope	lore	dote	sown
lite	oats	rock			rope	more	vote	
rite		tock				pore		
		sock				sore		
						tore		

PREFIXES AND SUFFIXES

Prefixes

de

defeat  
detour  
deform  
decade  
demerit

dis

disown  
disobey  
disagree  
dislike  
disloyal

en

enjoy  
enlist  
enact  
enroll  
entitle

ex

exact  
exceed  
excite  
excuse  
exhale

con

concur  
concede  
conclude  
confuse  
conform

com

complete  
comply  
combine  
compound  
compact

in

inhale  
inside  
indent  
incorrect  
informal

pro

proceed  
project  
program  
produce  
prolong

re

recall  
renew  
remake  
reopen  
refresh

un

unable  
unfit  
untrue  
unlace  
unpack

pre

preview  
precede  
prepay  
prewar  
prepaid

Suffixes

al

postal  
optical  
critical  
comical  
personal

ance

allowance  
assistance  
acquaintance  
disturbance  
appearance

able

suitable  
portable  
available  
payable  
obtainable

ive

active  
detective  
defective  
destructive  
excessive

ful

careful  
handful  
painful  
helpful  
joyful

Suffixes (continued)

<u>y</u>	<u>tion</u>	<u>ing</u>	<u>ment</u>	<u>less</u>
airy	action	being	payment	careless
rainy	adoption	ending	amazement	useless
rocky	edition	going	excitement	worthless
sleepy	election	earning	employment	helpless
frosty	direction	feeling	pavement	fearless
<u>ness</u>	<u>ly</u>	<u>ous</u>		
blindness	sickly	joyous		
darkness	kindly	dangerous		
likeness	yearly	perilous		
sadness	costly	poisonous		
goodness	lively	pompous		

EXAMPLES OF WORD BUILDING EXERCISES

A  
AL  
ALL  
TALL  
TALLY

A  
AL  
AIL  
TAIL  
TRAIL

A  
AN  
PAN  
PANE  
PANES

A  
AN  
AND  
ANDY  
CANDY

A  
AN  
BAN  
BAND  
BLAND

A  
AN  
RAN  
RANK  
FRANK

A  
AS  
ASP  
RASP  
GRASP

A  
AT  
ATE  
LATE  
PLATE

A  
AT  
OAT  
GOAT  
GLOAT

A  
AT  
RAT  
RATE  
GRATE

I  
IT  
BIT  
BITE  
BLITE

I  
IN  
BIN  
BING  
BINGE

I  
ID  
SID  
SIDE  
ASIDE

I  
IN  
SIN  
SINK  
STINK

I  
IN  
TIN  
THIN  
THING

BE  
BEA  
BEAR  
BEARD

ED  
RED  
REED  
GREED  
GREEDY

HE  
THE  
THEE  
THERE

NO  
NOT  
NOTE  
NOTED

ON  
ONE  
LONE  
ALONE

OR  
FOR  
FORE  
AFORE

TO  
TOP  
STOP  
STOOP

RHYMING WORD LISTS

ate	at	ton	in
rate	sat	son	tin
mate	mat	won	sin
date	hat	done	pin
plate	rat	none	thin
grate	that	one	shin
state	flat	fun	skin
great		pun	win
wait		sun	chin
heat	or	set	dine
meat	nor	net	line
seat	tore	let	mine
eat	bore	met	shine
treat	door	pet	whine
wheat	poor	fret	nine
sweet	shore	bet	fine
meet	store	wet	pine
tweet	pour		
	soar		
	floor		

"AND" WORDS

BAND	BLAND	CANDY
HAND	BRAND	DANDY
LAND	GLAND	CANDLE
SAND	GRAND	SANDAL
WAND	STAND	PANDA
WANDER	STRAND	VANDAL

"ING" WORDS

KING	BRING	FINGER
RING	FLING	SINGER
SING	STING	MINGLE
WING	STRING	SINGLE
	THING	TINGLE
	WRING	

SENTENCES EMPLOYING COMMONLY  
USED TWO-LETTER SEQUENCES

The clown slid and stumbled.

When the floppy-eared, brown hound growled,  
the children laughed with glee.

The clapping stopped short.

Ernest dropped in while you were talking on  
the phone.

Place your phosphate on the table.

Creepy, crawly creatures went winding around  
the trees.

He is silently sleeping.

Twelve of them have teeth.

COMMON-KEY EXERCISES

(These exercises are to be used only  
after the entire "Cybercode"  
has been taught)

COMMON-KEY LETTER COMBINATIONS

The following are letter combinations in which the fingering of the "Cybertype" code changes for only one hand. That is, in typing these letter combinations, the same key is depressed for each letter within a specific group (i. e. Control Key No. 1 is depressed for all combinations within Group A; Control Key No. 2 is depressed for all combinations within Group B, etc.)

*Cybernetics Research Institute*

Common Left-Hand (Control) Key

<u>Group A</u>	<u>Group B</u>	<u>Group C</u>
eo	sc	uf
et	sh	ub
ot	sl	ug
nt	sm	up
at	ch	gu
it	cl	pu
ai	dr	fu
in	rd	bu
ni		fy
ti		by
to		py
an		gy
te		
en		
on		
no		
tion		

B-106

The following is a series of letter combinations in which a common right-hand key is depressed for each group of paired letters (i. e. for "ur," right-hand key No. 1 is depressed for both letters; for "co," right-hand key No. 5 is depressed, etc.).

Common Right-Hand Key

ur	th	ad
es	ph	ay
ef	ng	day
co	ln	im
ob	gl	wi
oc	da	mi
		ix