

MB ELECTRONICS
MILTON BRADLEY

BIG TRAK

OPERATOR'S MANUAL

BATTERY INSTALLATION

1. BIG TRAK requires five batteries-four "*D*" cells and one 9 volt. Locate the ON/OFF switch to the right of the keyboard. Make sure the switch is *back* in the Off position before inserting the batteries.
2. To insert the four *"D"* cell batteries, locate the battery box on the bottom of BIG TRAK. *See Fig. 1.*
3. Press both locking tabs outward as shown in *Fig. 1* to release the battery cover. Lift off the cover to expose the battery compartment.
4. Match the charge of each of the four batteries with the charge signs located inside the battery compartment. Use only alkaline batteries for longer life and better performance. Insert the batteries as shown in *Fig. 2* and replace the battery cover.
5. Locate the battery compartment on top of BIG TRAK. *See Fig. 3.* Turn the battery cover counterclockwise and lift off.
6. Attach one 9 volt battery (alkaline type) to the battery clip. Make sure the connection is properly joined as shown in *Fig. 3* or you may cause damage.
   Note: If the connection is not a tight *"snap-on"* fit, lightly pinch the slotted spring terminal of the battery and battery clip with pliers.
7. Insert the battery and battery clip into the compartment. Replace the battery cover and turn clockwise to lock.

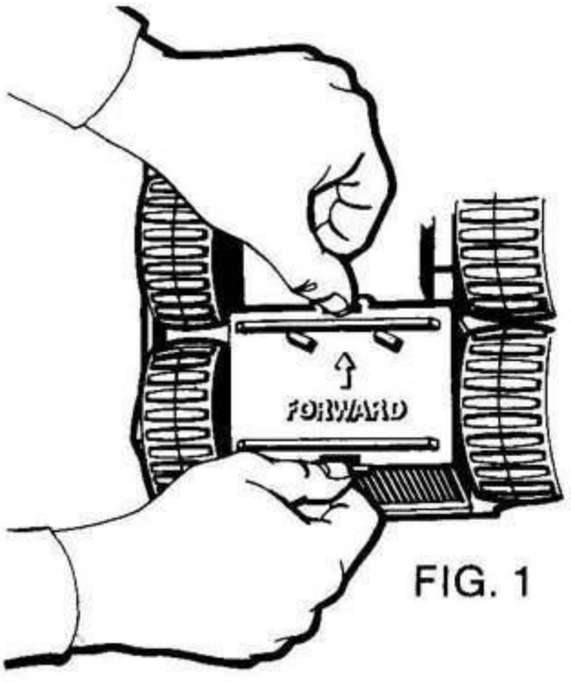
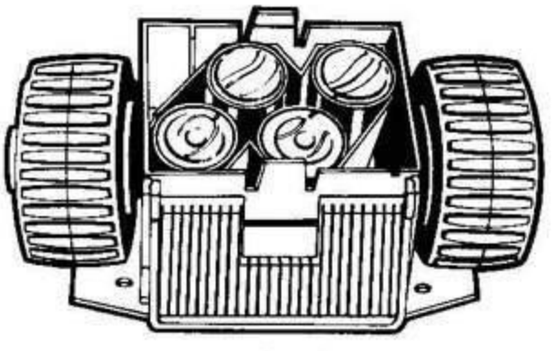
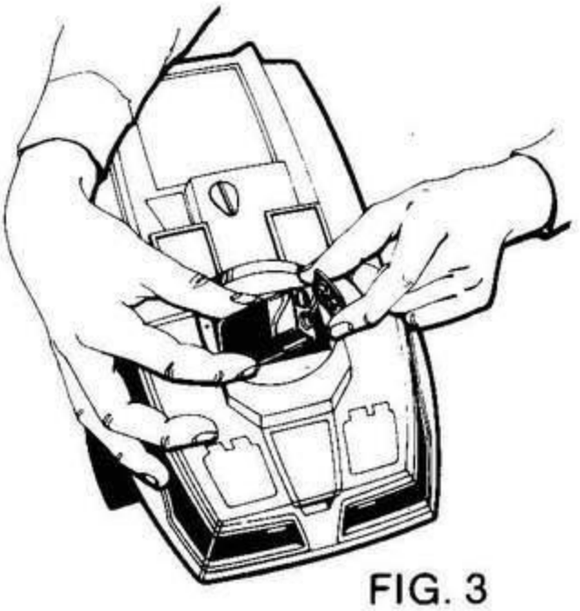


FIG. 1


FIG. 2


FIG. 3

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BATTERY LIFE AND REPLACEMENT

Even new batteries may be defective or weak. Please make sure your batteries are fresh and strong. Generally, if BIG TRAK's action is slow, the *"D"* cell batteries are weak and need to be replaced. If the action is erratic, the 9-volt battery is weak and needs to be replaced.

Note: It is recommended that you replace the 9 volt and *"D"* cell batteries together.

BULB REPLACEMENT

1. If the firing light fails, replacement of the 2.2 volt/.25 amp miniature screw base bulb will be necessary.
   Note: Bulbs are available wherever flashlight accessories are sold.
2. Using a small, thin screwdriver, pry up the inserts in the top of BIG TRAK as shown in *Fig. 4.*
3. Grasp the sides of the inserts and lift straight out as shown in *Fig. 5.*
4. To reach the bulb, you must now remove the screws (located in the center holes of the recessed areas) that hold down the cover. Using a Phillips head screwdriver, loosen the screws and lift the cover up. The screws will fall out.
   Note: Do not lift the cover too high as you may disconnect the wires. Also, do not touch the electronic components as you may damage them.
5. Unscrew the bulb, shown in *Fig. 6,* and replace with a new bulb that you have tested to be sure it works.
6. Set the cover back in place, drop the screws into the holes and tighten them. Please be careful not to overtighten.
7. Replace the inserts in the cover.

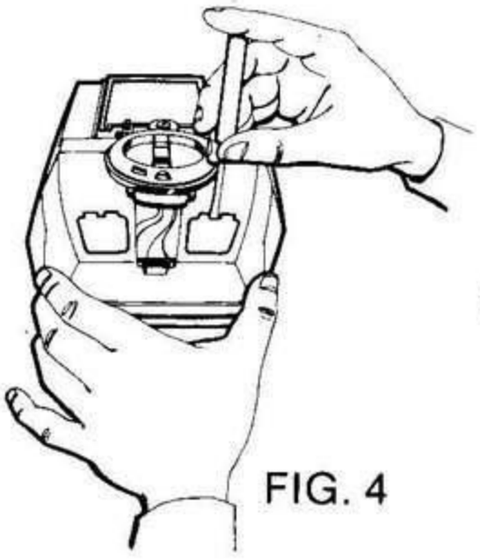


FIG. 4

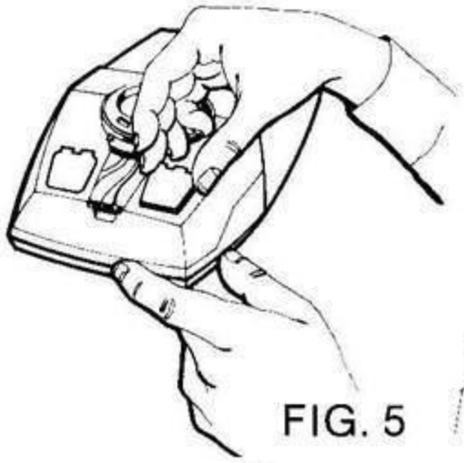


FIG. 5

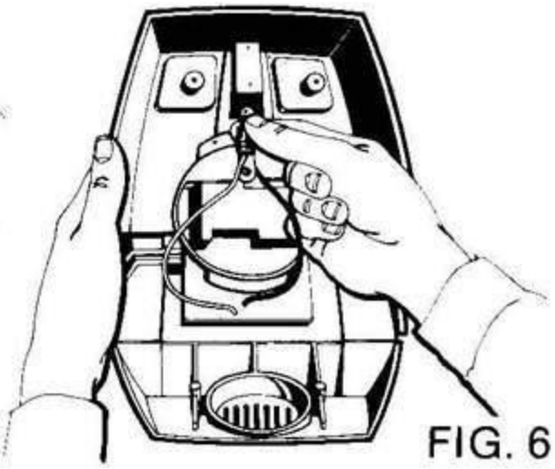


FIG. 6

LABELING DIRECTIONS

Easy-to-apply labels are included with BIG TRAK to add exciting detail. Labels are numbered and correct positions are indicated in the following illustrations. Peel off labels one at a time and apply as shown in *Figures A through C.* After labels are applied, rub down firmly.

FIG. A

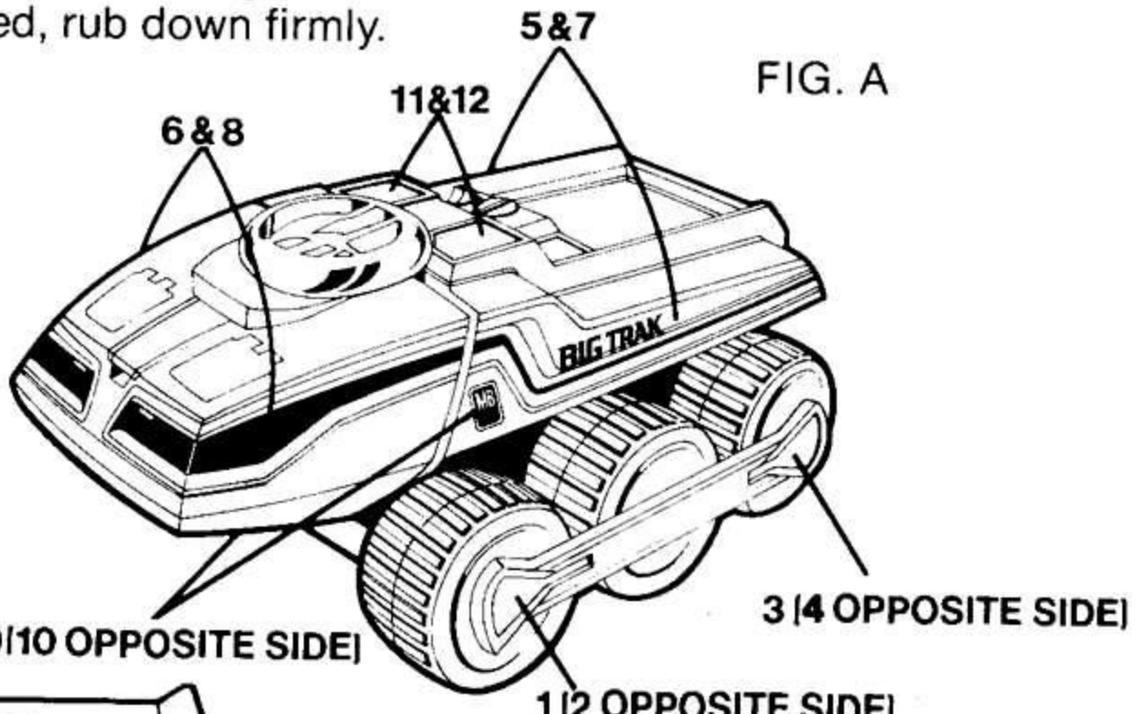


FIG. B

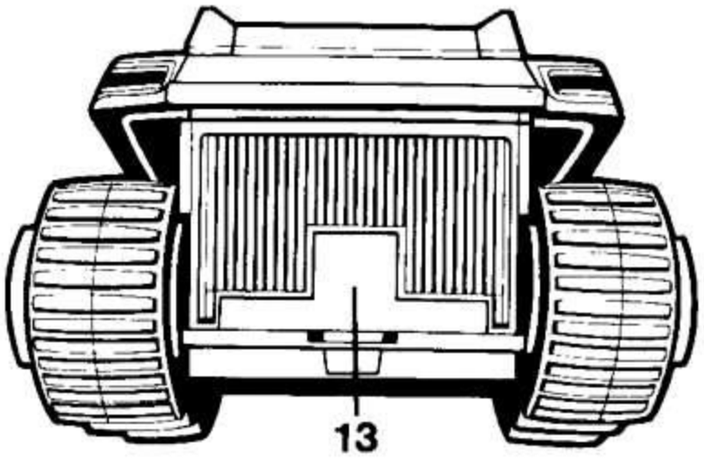
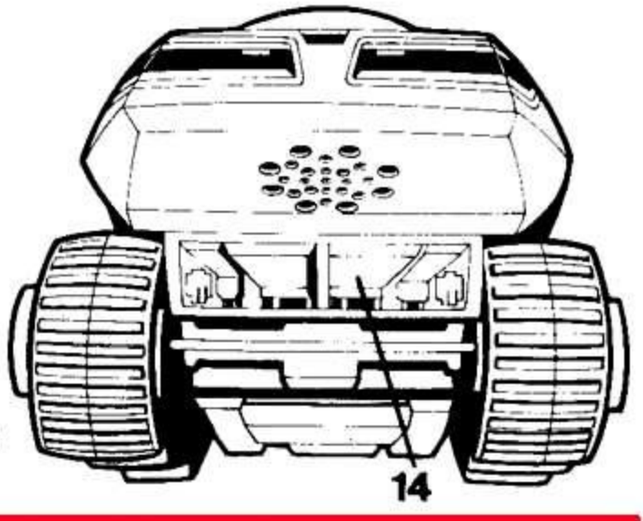


FIG. C



SPECIAL CAUTIONS

1. Be careful when handling BIG TRAK - place it on the floor gently. Don't drop it or you may cause damage.
2. Grip both hands on the center wheels when picking up BIG TRAK.
3. Don't send BIG TRAK down steps or run it through water, dust, or sand.

INTRODUCTION

When you operate your new BIG TRAK, you are controlling a computer. Telling BIG TRAK's computer what to do is called *"programming"*. You can program up to 16 different steps, such as *"go forward"*, *"stop"*, *"turn"*, *"fire" and so on.*

To "program" BIG TRAK, you enter instructions into the keyboard that you see on the top of the vehicle. This keyboard will direct BIG TRAK just as a steering wheel and brake direct your family automobile.

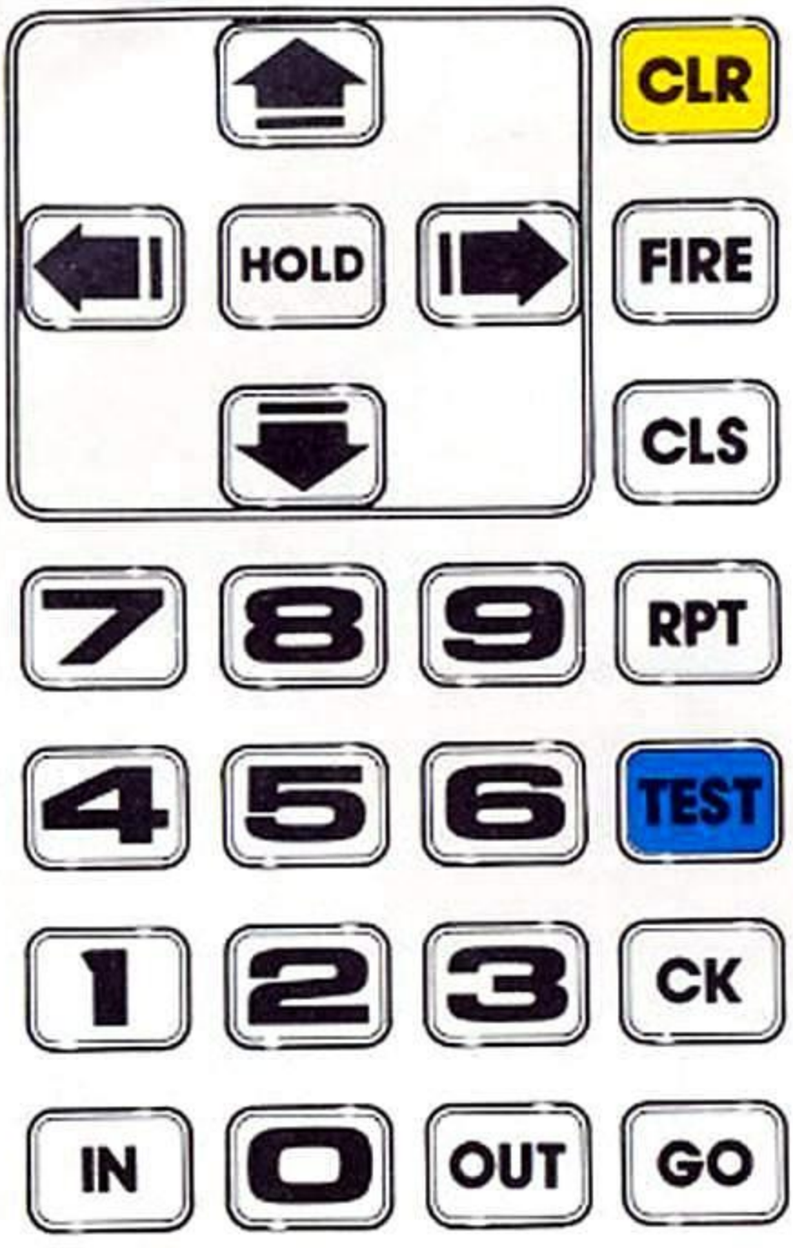
The easiest way to learn how to *"program"* will be to read these instructions, one page at a time, and to try what you learn on each page.

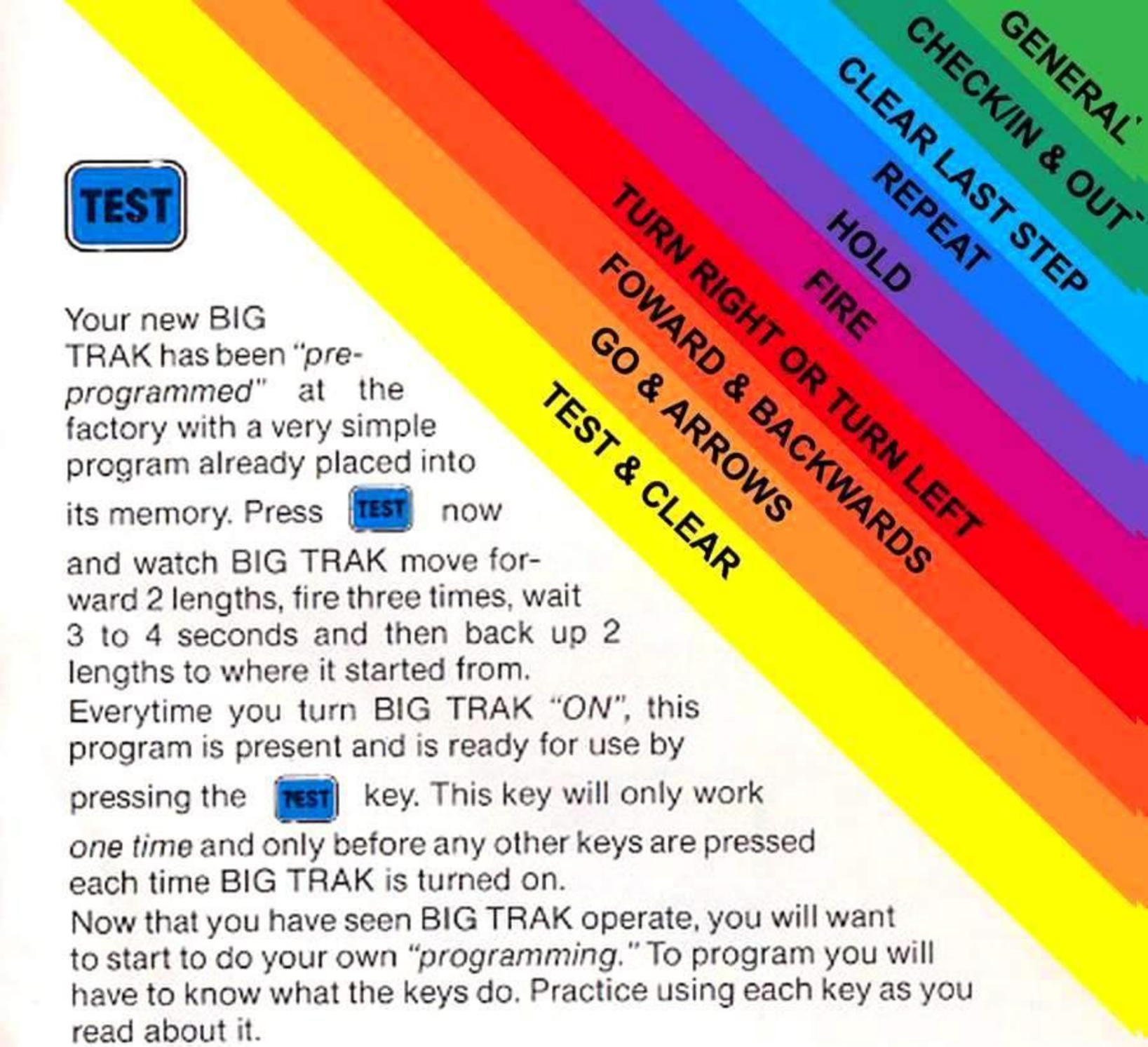
Turn BIG TRAK on by sliding the ON/OFF switch *forward* in the direction of the arrow.

One thing to know right now is that BIG TRAK will *"beep"* approximately every 30 seconds when it is turned on. This is to remind you that it is ready to be programmed. BIG TRAK will also *"beep"* to remind you that it is still on when you are through playing with it.

EXPLANATION OF SYMBOLS

←	means one length of travel (approx. 13") for each arrow.
← 14	means the amount of a turn that has been programmed and the direction of the turn.
OOOOO	means the amount of *"Fire"* that is called for. Each dot stands for 1 shot of the "Photon" Cannon.
STOP/START	shows the beginning and ending points for each diagram.


CLR
HOLD
FIRE
CLS
7
8
9
RPT
4
5
6
TEST
1
2
3
CK
IN
0
OUT
GO



Your new BIG TRAK has been *"pre-programmed"* at the factory with a very simple program already placed into its memory. Press

now and watch BIG TRAK move forward 2 lengths, fire three times, wait 3 to 4 seconds and then back up 2 lengths to where it started from.

Everytime you turn BIG TRAK *"ON"*, this program is present and is ready for use by pressing the

key. This key will only work *one time* and only before any other keys are pressed each time BIG TRAK is turned on.

Now that you have seen BIG TRAK operate, you will want to start to do your own *"programming."* To program you will have to know what the keys do. Practice using each key as you read about it.



Find the key that says 

. This is the **CLEAR KEY**

Pressing this key will remove or erase all instructions from BIG TRAK's memory. When you erase the entries with this key, the *entire* computer memory becomes blank and you can program new instructions for BIG TRAK to perform. When you want to change

programs, CLR is the first key to press. If CLR is not pressed, then the previous program is retained in BIG TRAK's memory and can be repeated by pressing GO . If more instructions are added, BIG TRAK will repeat the first program then perform the new commands when you press GO . Now press CLR to cancel TEST program, and you're ready to read about GO on the next page.



GENERAL

CHECK/IN & OUT

CLEAR LAST STEP

REPEAT

HOLD

FIRE

TURN RIGHT OR TURN LEFT

FOWARD & BACKWARDS

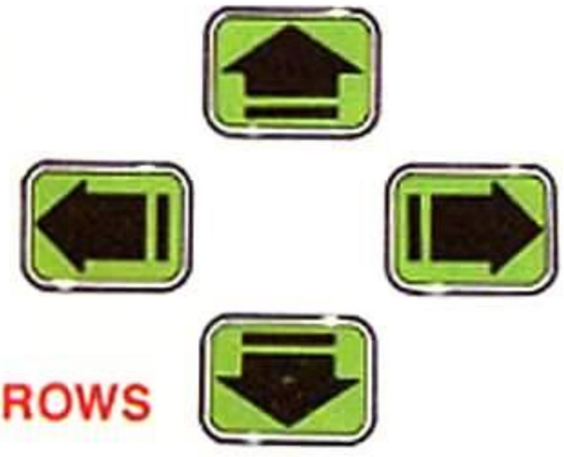
GO & ARROWS



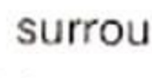
The green 

key tells BIG TRAK to start to do its program. Find it on the keyboard. When you use this key, you start the action as soon as you press it. In other words, turn BIG TRAK *"ON"*, program instructions, press 

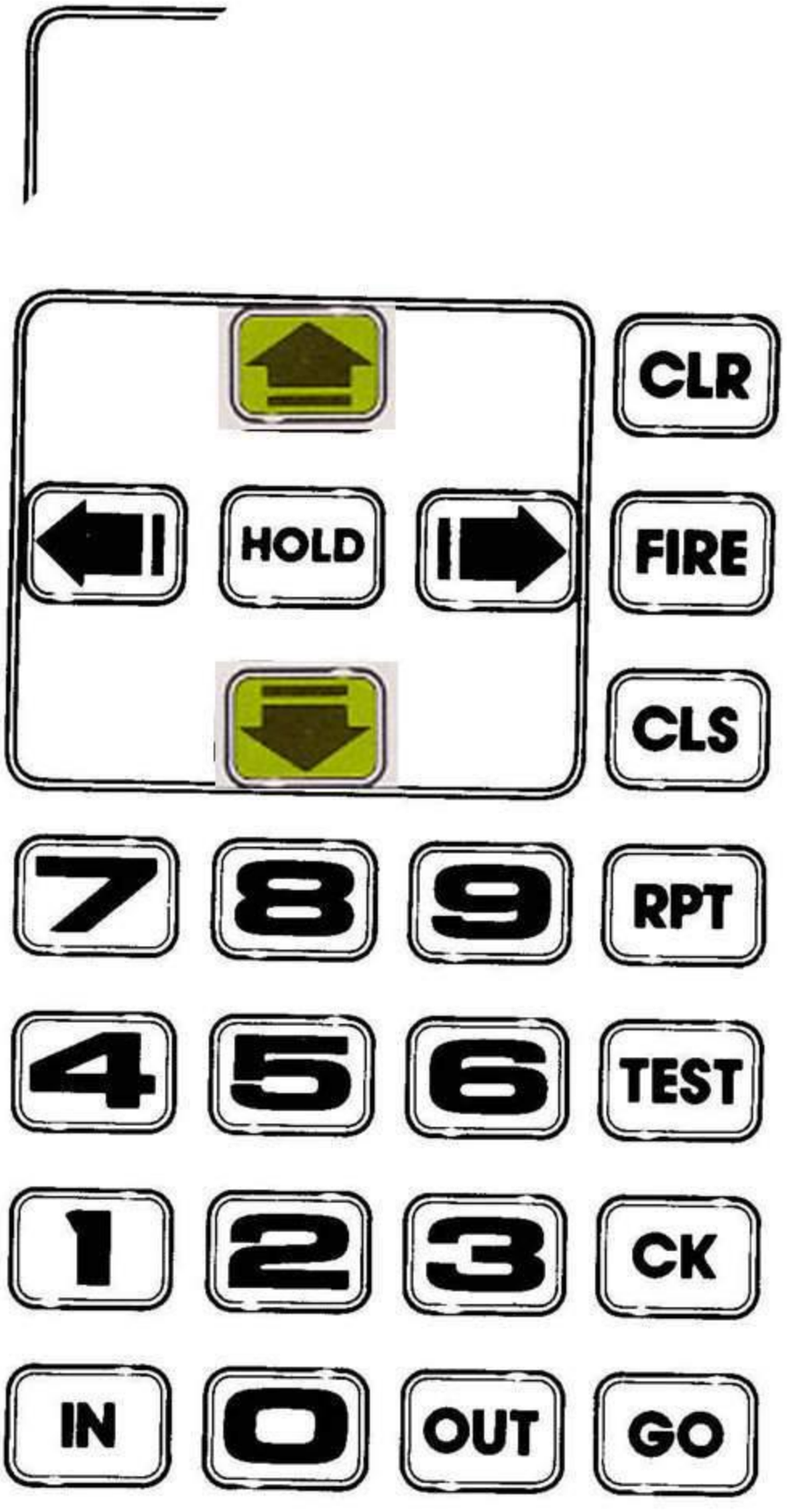
and BIG TRAK will immediately perform. (Some other keys that you will read about later will require two parts.)



ARROWS

At the left top of BIG TRAK's instruction panel are four green arrows that surround the red word 

. Find these four arrows right now and point at them.
The top arrow tells BIG TRAK to move *"forward"*, the bottom arrow moves BIG TRAK *"backwards"* and the two (2) side arrows tell BIG TRAK to turn *"right or left"*. Right now we will talk about Forward and Backwards. We will discuss turns later.


CLR
HOLD
FIRE
CLS
7
8
9
RPT
4
5
6
TEST
1
2
3
CK
IN
0
OUT
GO



FORWARD AND



BACKWARDS

When you press either of these keys, (only one at a time), you program BIG TRAK to move either forward from its position or to back up from it. A movement like this also needs to be programmed for distance, therefore, *you need a second instruction.* This tells BIG TRAK how far to go. To tell BIG TRAK how far, you will have to press a number key, any *number* from 1 to 99. **(EACH NUMBER WILL MOVE BIG TRAK ONE LENGTH OF ITSELF.)** The higher the number the longer the distance.

Try this: Press  then [1] then [GO] . Watch BIG TRAK move forward its own length, (roughly 13 inches.)

The same system holds true to move BIG TRAK backwards. Now try this: Press [CLR] , press  [2] , press  [2] and [GO] .

After you have seen BIG TRAK perform this program, press [CLR] and turn to the next page.


CLR
HOLD
FIRE
CLS
7
8
9
RPT
4
5
6
TEST
1
2
3
CK
IN
0
OUT
GO



TURN RIGHT

OR

TURN LEFT



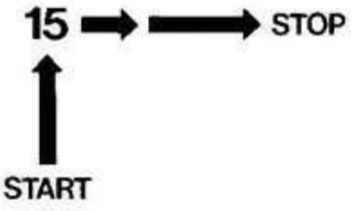
These keys are located on either side of the red HOLD button. When you press one of these arrows, BIG TRAK will turn to that side. Look at the pictures below. They give you the *approximate* numbers to program when making a turn. (Numbers vary slightly from BIG TRAK to BIG TRAK). Example:  1 5 will give you a full right hand turn, while  3 0 will turn BIG TRAK to the left in the opposite direction from where it was pointed. IMPORTANT: BIG TRAK can be turned either right or left to get to any point.





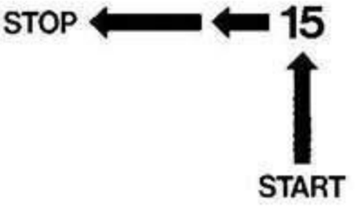
Let's try a right turn: Press CLR ,  1 ,  1 5 ,  1 then GO . BIG TRAK will move 1 *"length"* forward, make a full right hand turn, then move forward again.

Your BIG TRAK's movement should look like this diagram.

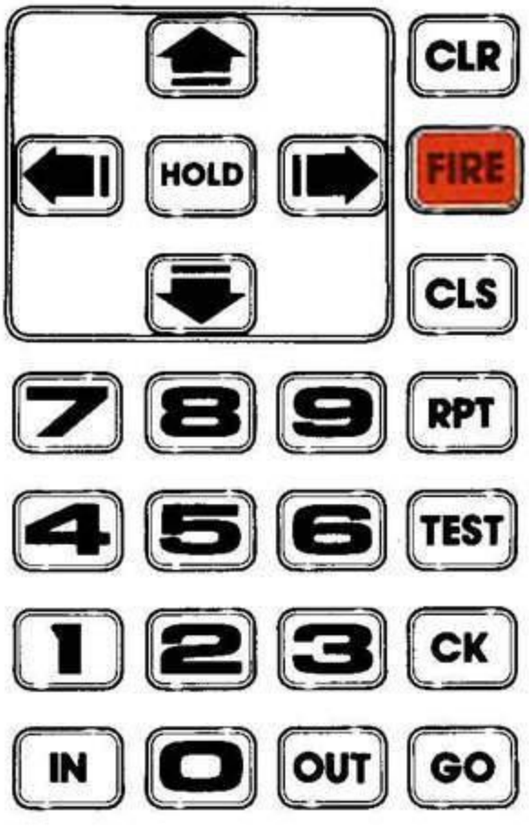


Let's try it another way: For left hand turns,

press CLR , ↑ 1 , ← 1 5 , ↑ 1 then GO .



Did BIG TRAK move the same way as this diagram? Looking at the program shown above, you can see several different steps in the same program. You have Forward movement, a Left turn, and more Forward movement. You can keep adding steps (up to 16) to make BIG TRAK do complicated things.





This red button tells BIG TRAK to fire its "photon" beam against the enemy. Program this order into the computer by pressing the FIRE key. BIG TRAK is ready to fire but you must tell it something else — what else? That's right, you must tell BIG TRAK *how many times* to fire!

Try this: Tell BIG TRAK to fire 9 times — what will you program?

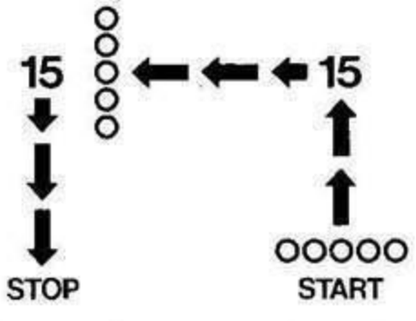
Press CLR, Press FIRE,

Press 9, Press GO.

Did BIG TRAK fire correctly?

If you program BIG TRAK to *"fire"* but forget to say *"how many"*, BIG TRAK will not accept any further directions until you press a number key. This is also true for Forward, Reverse, Left, Right, Hold, and Repeat. As you already know, without *"GO"* at the end of this order, BIG TRAK will not operate but will wait. Try this:

Press CLR, FIRE 5, ↑ 2, ← 1 5, ↑ 2, FIRE 5, ← 1 5, ↑ 2 and GO. This is a diagram of what your BIG TRAK's movement will look like.



Now press CLR and turn the page for a brief review of what you have learned.

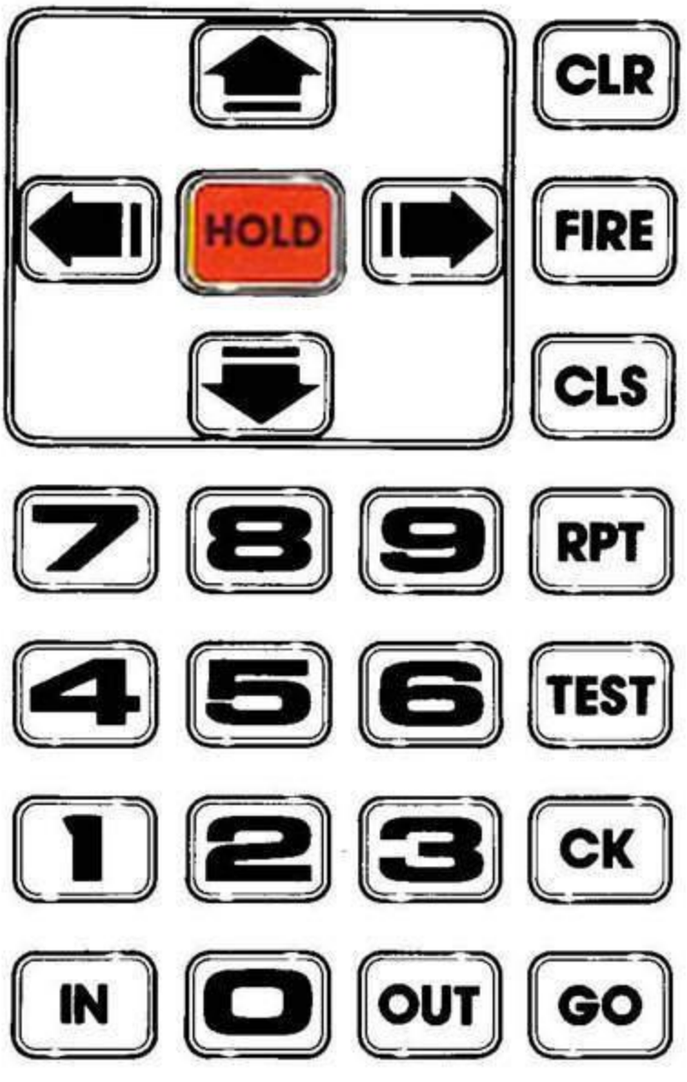
Note: It's a good habit to always press CLR before starting to enter your new programs.

REVIEW

.Take a minute and review everything that you have found out up to now.

1. You know how to turn BIG TRAK on.
2. You know that you have to press GO after your instructions to get BIG TRAK to operate.
3. You know how to make BIG TRAK go forward, back-up and to turn right or left.
4. You know that you can get BIG TRAK to do more than just one step at a time. In fact, you can tell BIG TRAK to do 16 different steps, *one right after another.*

Now look at the rest of the keys, one page at a time, to see what they do.





This red symbol tells BIG TRAK to wait for a period of time after one order before it does its next order.

Because of this, you know that HOLD key will need a second command to set a period of time.
With BIG TRAK, each unit of time is a tenth of a second. If you want BIG TRAK to wait 6 seconds, you program HOLD and 6 0 .

How did we get the 60? If pressing *"1"* means a tenth of a second, pressing *"10"* means a full second — correct? Multiplying this 10 by 6 we get *"60"* or, 6 seconds.
Try this: Move BIG TRAK forward 3 lengths, wait 4 seconds and then back up 3 lengths.

a. Press CLR
Press ↑
Press 3

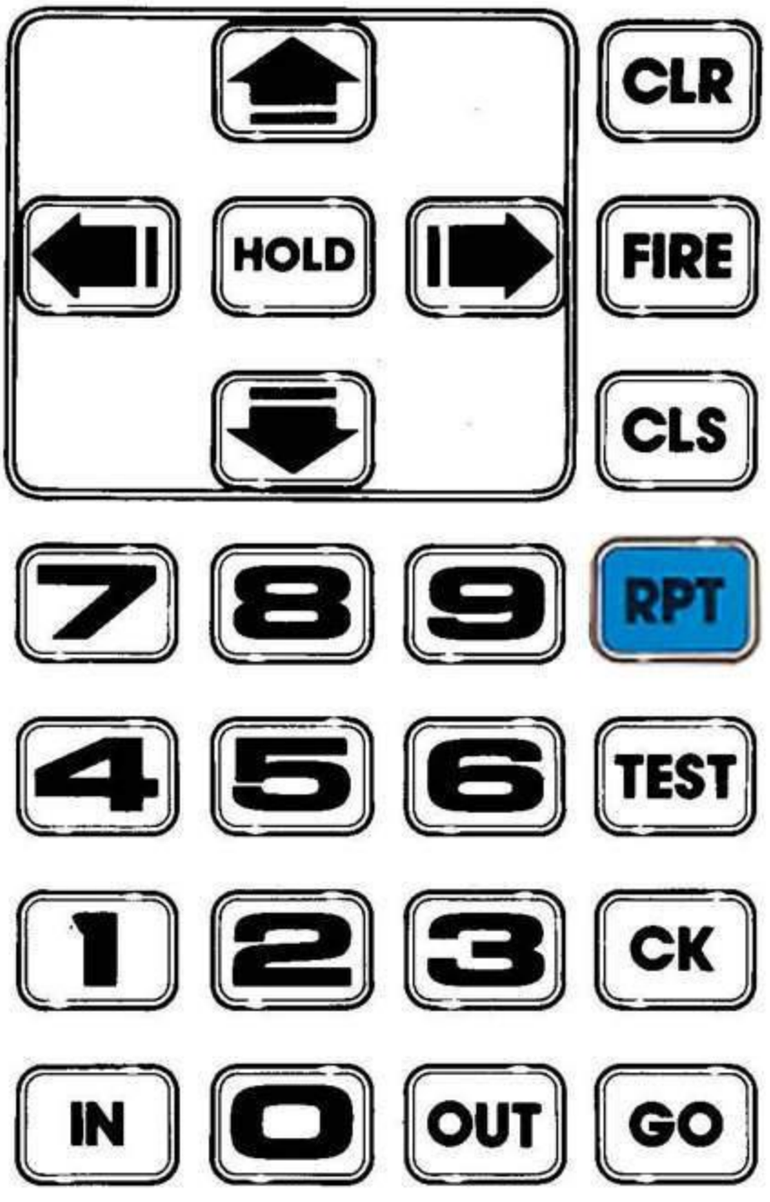
b. Press HOLD
Press 4 0

c. Press ↓
Press 3

d. Press GO

Did BIG TRAK go forward, stop then back up?
You can schedule a pause of almost 10 seconds per step.

Now press CLR and turn the page to RPT .


CLR
HOLD
FIRE
CLS
7
8
9
RPT
4
5
6
TEST
1
2
3
CK
IN
0
OUT
GO

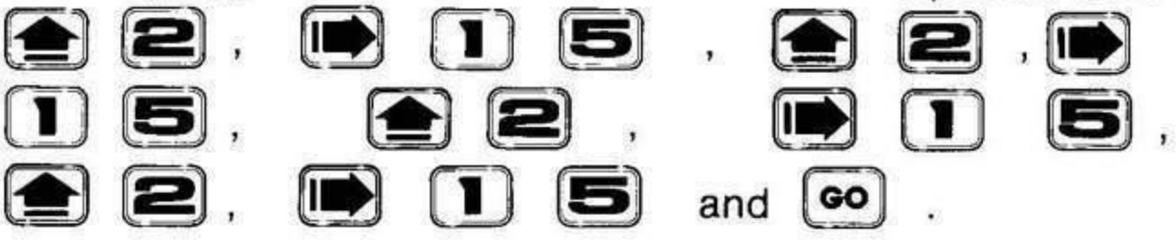


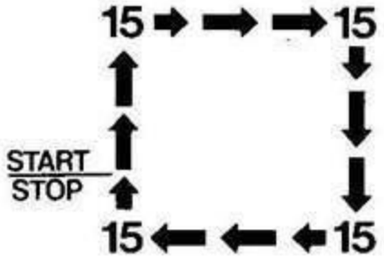
Find this key on the keyboard. It is very important because you can repeat orders that you have already put into the computer memory without having to do them all over again. *This key can only be used once during a program.*

When you use 

you have to tell BIG TRAK how many *previous* instructions to repeat. It is important to know that BIG TRAK begins with the last instruction, counts backward the number of steps that you have told it to repeat, and then starts *forward* through these steps, adding them to the existing program.

As an example, you want BIG TRAK to travel in a square. Press:



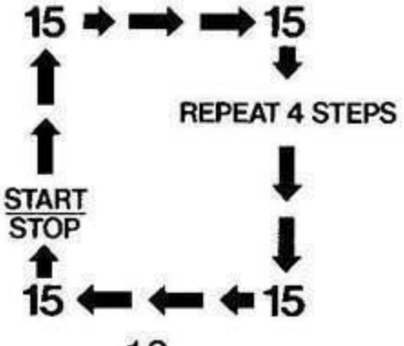


By using the 

key, you can make the same square in fewer steps.

Press: 

BIG TRAK will do the same square.



CAUTION: RPT can be used only one time during your whole program. Don't forget, this key repeats the program steps that were in the memory before you pressed RPT *not what is put in after it!*

Now press CLR and go onto the CLS page.



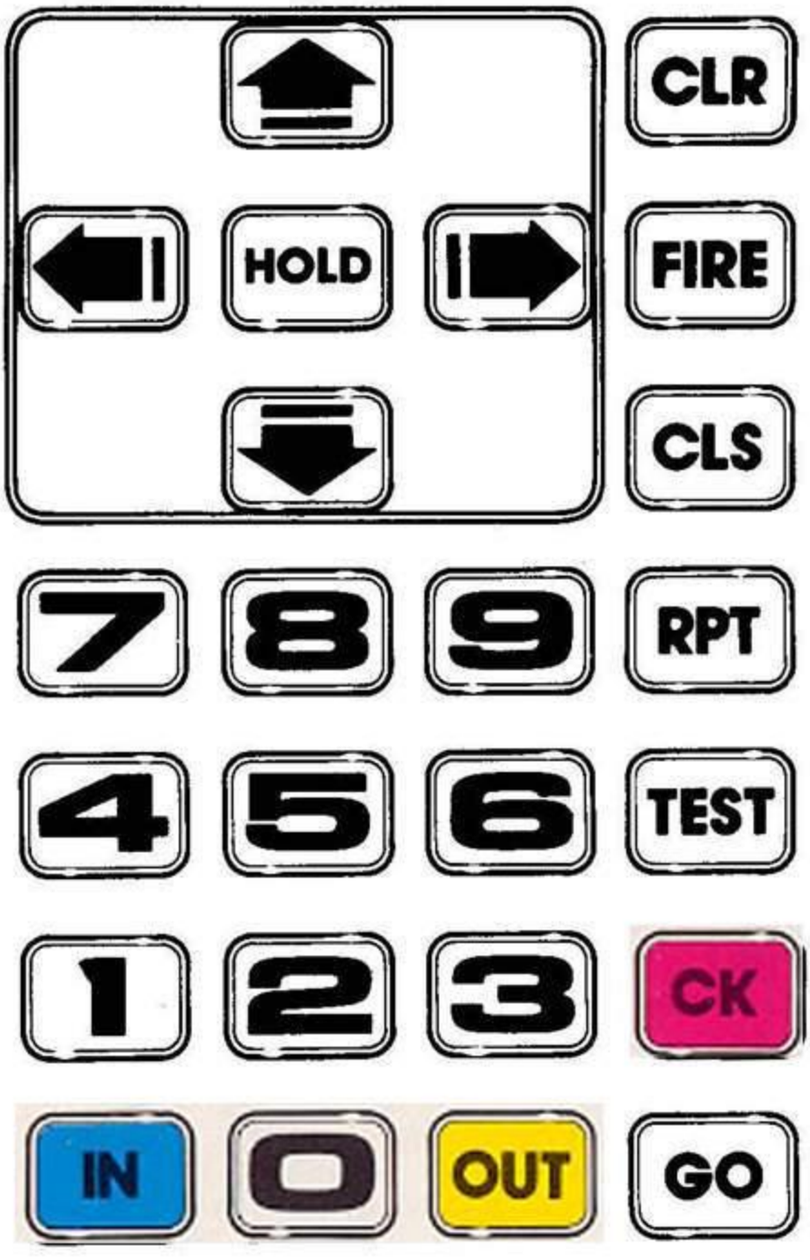


(CLEAR LAST STEP) is important because it lets you erase the *last* instruction in BIG TRAK's memory if you change your mind about a program.

Once you press CLS, program a new instruction to take the place of the one that you erased.

Reading this, you should realize that CLS allows you to cancel the last entry that is in the memory. Repeated pressing of CLS will remove the last instruction each time the key is pressed. In fact, you could remove an entire program from the memory bank with this key. In such a case, however, you would ordinarily use the CLS key and do it all at once. Using CLS it is not possible to *"skip"* steps. CLS always removes the *last command* in the memory.

As an example: You have entered ↑ 5 , → 1 7 , ↑ 4 . But now you decide you don't like the last 2 moves, press CLS , CLS (to erase last 2). Your program will now look like ↑ 5 . Simply add new instructions by entering them into the memory.


CLR
HOLD
FIRE
CLS
7
8
9
RPT
4
5
6
TEST
1
2
3
CK
IN
0
OUT
GO

CK

You use CK (CHECK) to find out if your last instruction tells BIG TRAK to do exactly what you want it to do.

In other words CK allows you to test instructions before they are fixed into BIG TRAK's memory.

EXAMPLE: You want BIG TRAK to make a full turn to the right. Press ➡ 1 5 . Because floor surfaces will vary from house to house, and room to room, *"15"* may not be enough to make the turn that you want. Or it may be too much. To find out, press CK .

By watching BIG TRAK, you can see if *"15"* was good. If it was, proceed to your next instruction. If *"15"* was not enough to turn BIG TRAK as much as you want (or turned it too far), press the CLS key. (This erases the last instruction). Next, re-program the turn and check it by again pressing CK key and watch the results. You can do this until you get the turn that you want. Once you are satisfied, proceed to your next instruction.

REMEMBER: CK is used to check only the last entry that you are programming.

IN AND OUT

These two keys are for use with accessories for BIG TRAK.

The OUT key is used with the BIG TRAK TRANSPORT that can be purchased separately. When you press this key without the TRANSPORT attached, this step will be counted as one of your sixteen steps and will cause BIG TRAK to pause in its program for 3-4 seconds.

GENERAL OBSERVATIONS

To get the most fun out of BIG TRAK you should remember:

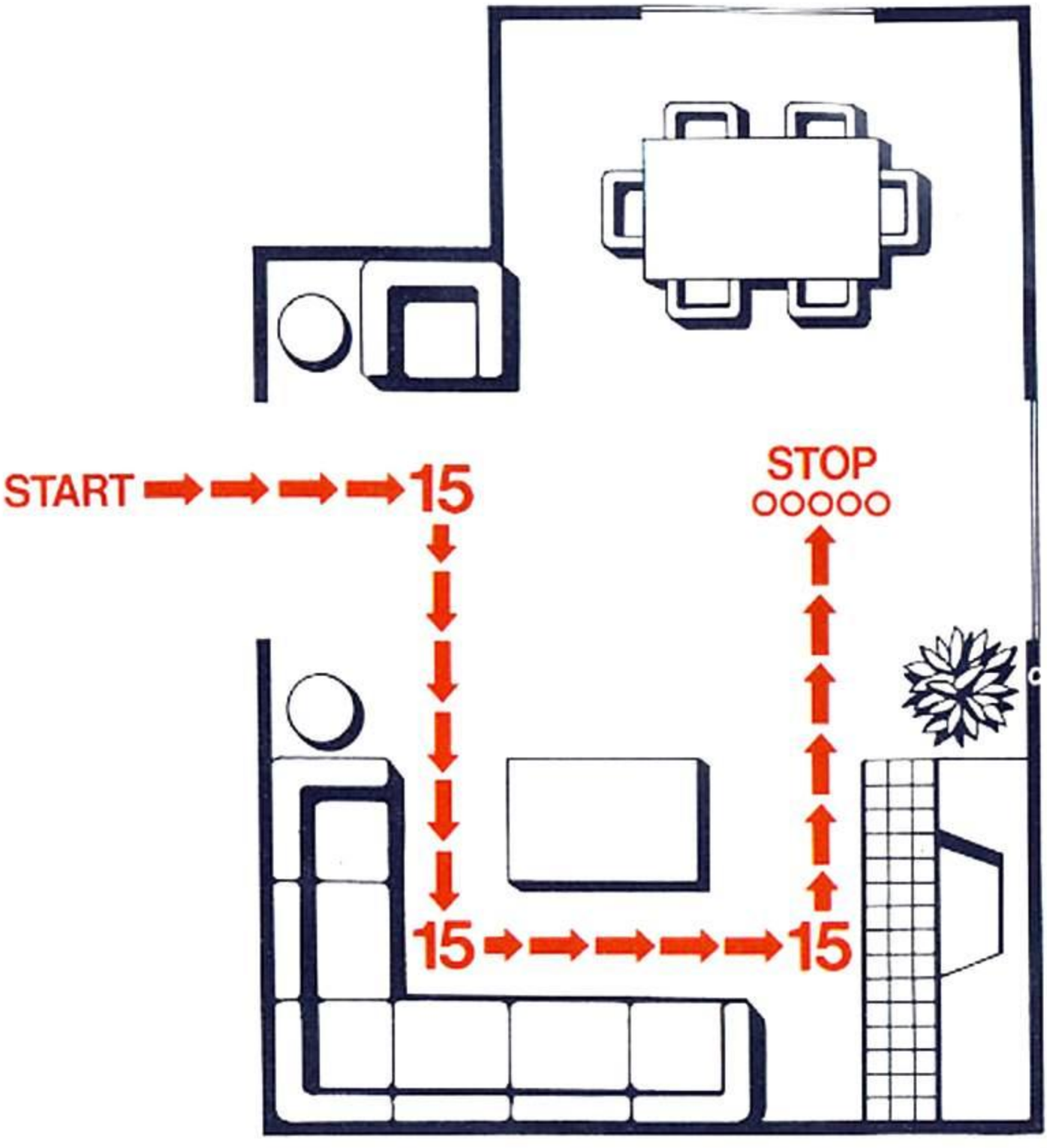
1. All instructions except [TEST], [CLR], [CLS], [GO], and [CK] require two distinct parts. The following chart shows which second step is needed for each instruction.

Test	— None	Backward/Forward	— How far
Clr	— None	Turn	— How much
Cls	— None	Fire	— How many shots
Go	— None	Hold	— How long
Ck	— None	Repeat	— How many steps

2. All operating surfaces are different. The number used for distance or turns will vary from surface to surface, therefore use your [CK] key to find correct number to program.
3. BIG TRAK is designed to operate on flat surfaces. When BIG TRAK runs into steep grades or obstacles such as walls, it will stall until it is redirected. During this period, its tone will change to alert you.
4. Through careful programming, you will be able to have BIG TRAK perform 16 different steps. These can include turns of more than 360 degrees, up to 99 lengths of travel either forward or backwards and up to 99 blasts of the photon beams per step.
5. It is strongly suggested that experienced programmers chart out the various rooms in their house, showing things such as furniture that you want to avoid. This will help you to tell BIG TRAK how to move without running into things.

We have provided the following blank pages in this booklet for your notes. These can provide you with very valuable information for your programming. Draw out the room, the furniture and the successful programs that you do for later reference.

MY LIVING ROOM NOTES
SAMPLE



MY
NOTES
LIVING ROOM

MY NOTES

90 DAY LIMITED WARRANTY ON BIG TRAK

Electronic Big Trak is warranted by Milton Bradley Company to the original purchaser for a period of 90 days from the original purchase date—under normal use and service against defective workmanship and materials (batteries and light bulb excluded).

This warranty is void if Big Trak has been damaged by accident or unreasonable use, neglect, misuse, abuse, improper service or other causes not arising out of defects in workmanship or materials.

Milton Bradley Company shall not be liable for loss of use of Big Trak or other incidental or consequential costs, expenses or damages incurred by the purchaser. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

During the warranty period, if found to be defective due to workmanship or materials, Big Trak will either be repaired or replaced with a reconditioned Big Trak of an equivalent quality (at Milton Bradley's option) without charge to the purchaser when returned, shipping prepaid to Milton Bradley Company with proof of purchase date to the address listed below. In the event that Big Trak is replaced, the replacement will be continued on the original warranty or for 30 days, whichever is longer.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

After the 90 day warranty period has elapsed, for a period of up to one year from the date of purchase, Milton Bradley will, at its option, repair or replace with a reconditioned Big Trak when your Big Trak is returned with your check or money order in the amount of $5.00, shipped prepaid with proof of purchase date to the address listed below. Milton Bradley shall not be obligated to perform this service if Big Trak has been abused, misused or sustained other damage not arising out of defects in workmanship or materials.

Important—Before returning Big Trak for repair, we recommend that you test your Big Trak with fresh, strong batteries. Even new batteries may be defective or weak and low battery power is a frequent cause of unsatisfactory operation.

MAILING INSTRUCTIONS
PLEASE READ CAREFULLY

REMOVE THE BATTERIES—DO NOT RETURN THEM

If the original packaging is available, repack Big Trak in its packing and box. If the original packaging is not available, wrap carefully, making sure to surround Big Trak with adequate padding. Do not send the batteries with Big Trak. Mail to:

Milton Bradley Company
Attn: Electronic Quality Control
Building 104, Lincoln Street/Federal Square
Springfield, MA 01105