Physical Fitness

Helps you in planning (and staying with) an exercise program designed especially for you. Based on guidelines from the President's Council on Physical Fitness. Recommended ages: 13 and up.
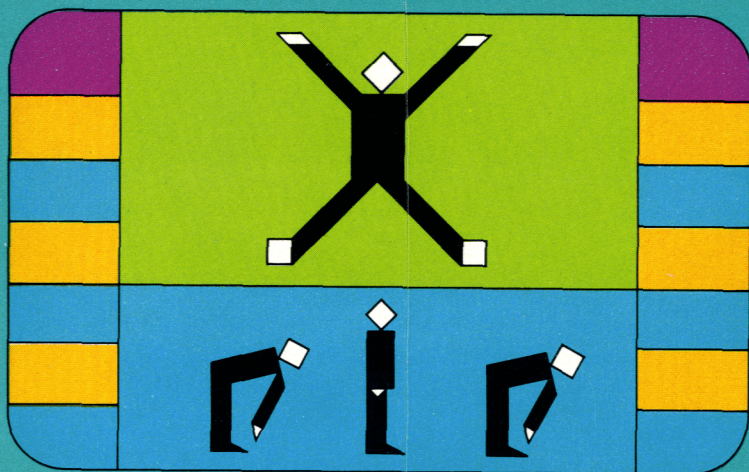
Quick Reference Guide

To take full advantage of the features and benefits of this Command Module, please read this manual completely. Important keystroke sequences are summarized here for your "quick reference."

Press	*Action*
SHIFT Q	"Quit" key — instructs the computer to leave the module and return to the main title display.
Space Bar	Stops the exercise if you want to rest. Pressing the Space Bar again restarts the exercise.
ENTER key	"Skips" to the next exercise.

Physical Fitness
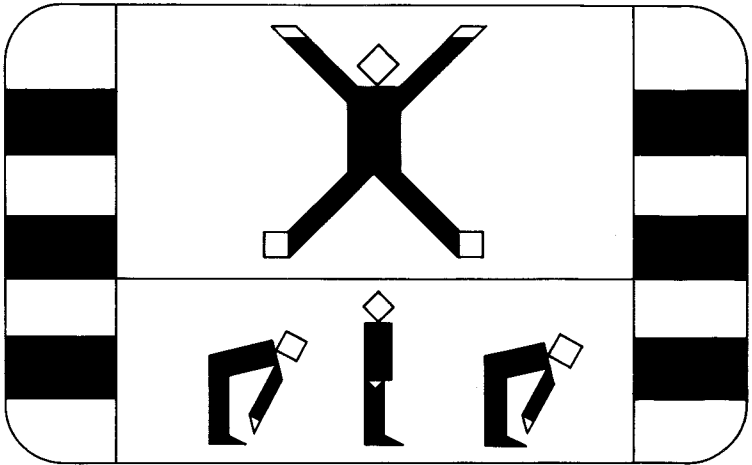
This *Solid State Software*™ Command Module is designed to be used with the Texas Instruments Home Computer. Its preprogrammed solid-state memory expands the power, versatility, and capability of your Home Computer.

Today as never before we are interested in finding exercise programs that promote our general fitness and good health. Only a generation or two ago most people received an adequate amount of exercise from their daily lives — walking to school or work and doing chores around the home or farm. Now, however, with our modern labor-saving devices — plus the fact that many of us have sedentary jobs — we often find that something extra in the way of exercise is needed.

Physical-fitness experts agree that the benefits of a regular exercise program, combined with other good health habits, can be enormous. Exercise can tone up the muscles, improve blood circulation and heart efficiency, and increase strength and endurance. It gives you greater muscle control, helps keep your body supple, and generally enhances your feeling of well-being.

In addition, exercising is an excellent way of relieving tension. When long hours of sitting at a desk or facing pressure situations give you a textbook case of "executive stress," you can loosen up those tight muscles by exercising. These benefits are well worth the small amount of time invested in a regular exercise program.

THE PHYSICAL FITNESS MODULE

The object of this module is to help you plan and maintain an exercise program designed for you — your lifestyle, your general health and condition, your exercise needs. The exercises, based on those found in *The United States Book of Family Physical Fitness*, prepared by the President's Council on Physical Fitness, are divided into five progressive levels, with separate categories for men and women. (These levels and the exercises themselves will be discussed more fully later.) The computer helps you keep track of the order in which the exercises are performed and the number of times to do each one and sets the pace for the exercises.

In addition, the module includes special evaluation sections based on your pulse rate. These help you evaluate your present condition, monitor your progress in your conditioning program, and determine when you are ready to go on to the next level.

AN IMPORTANT NOTE ABOUT YOUR PRESENT PHYSICAL CONDITION

We recommend that you consult your doctor before beginning any exercise program, regardless of your age and your own assessment of your present level of fitness.

Your doctor's approval and supervision are vital if your medical history and/or present condition include any of the following problems:

- Heart or circulatory diseases or impairments
- High blood pressure
- Diabetes
- Kidney disease
- Lung disease or disability
- Anemia
- Excessive obesity
- Chronic or severe back or joint problems or arthritis of back, legs, ankles, or feet
- Any other chronic disease, disability, or impairment that requires regular medical attention or restricts movement.

If you are over 35 years of age or have any of the above health problems, we recommend that you see your doctor for a complete physical examination, including a graded exercise "stress test" and monitored EKG (electrocardiogram), before beginning any exercise program. You will especially want your doctor to review the program's suggested "target" pulse rate and to recommend the maximum safe pulse rate suitable for your own physical condition.

In addition, *do* learn to recognize the physical signs of stress (we'll discuss these later) and *don't* neglect those regular medical checkups!

USING THE *SOLID STATE SOFTWARE*™ COMMAND MODULE
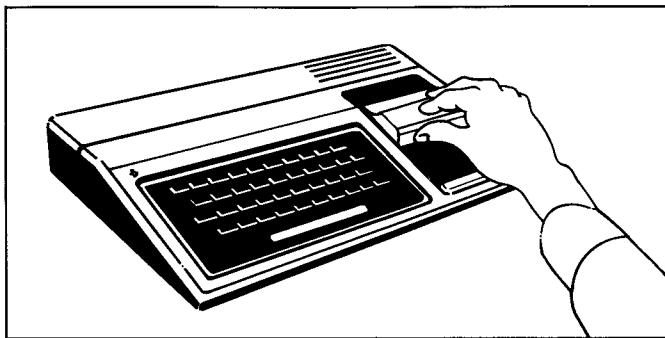
1. *If the computer is OFF,* slide the module into the slot on the console, and turn the computer on. The master title screen should then appear.

TEXAS INSTRUMENTS
HOME COMPUTER
READY-PRESS ANY KEY TO BEGIN

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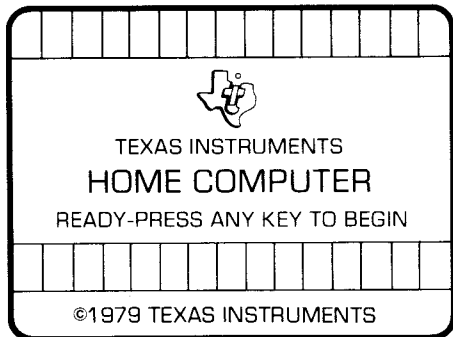
If the computer is ON, hold down the **SHIFT** key and press **Q** to make the master title screen appear. *Then* slide the module into the slot on the console.

2. Press any key to make the master selection list appear. The title of the module will be third on the list.

```
       TEXAS INSTRUMENTS
         HOME COMPUTER

    PRESS

    1  FOR TI BASIC
    2  FOR EQUATION CALCULATOR
    3  FOR PHYSICAL FITNESS
```
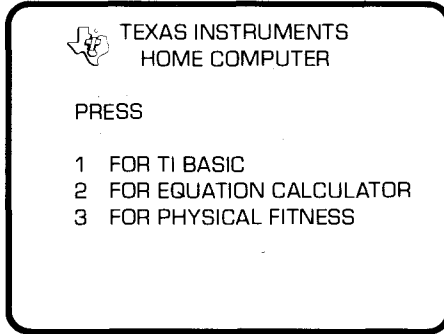
3. Press the **3** key to select the module.

(*Note:* To remove the module, *first* return the computer to the master title screen by pressing **SHIFT Q**. *Then* remove the module from the slot. If you have any problem with inserting the module, or if it is accidentally removed from the slot while in use, please see "In Case of Difficulty" on page 19.)

When **3** has been pressed, the video display will show a title screen for a few seconds to let you know that the computer is ready to present you with the contents of the Physical Fitness module. Next you'll see a selection list of the contents:

TEXAS INSTRUMENTS
HOME COMPUTER

```
PHYSICAL FITNESS

PRESS
    1    FOR INTRODUCTION
    2    EXERCISE EVALUATION
    3    A LOOK AT EXERCISES
    4    MEN'S EXERCISE
    5    WOMEN'S EXERCISE
```

The first time you use the Physical Fitness module, we recommend that you begin by pressing **1**, the number that selects the introduction to the exercises. This section will help you understand and use the exercise program more fully.

EVALUATION SEQUENCE
Next, when the selection list appears on the screen again press **2** to select the Evaluation Sequence. This section helps you find the level of exercise suited to your present condition by:

1. computing your "Target Training Value," the heartbeat rate you need to reach in order to strengthen your heart and circulatory system;

2. pacing you through the exercises at the level you choose; and then

3. measuring your heartbeat rate again and comparing your after-exercise rate to your Target Training Value, to see if you have chosen the correct level.

First you'll be asked to type in your age and press **ENTER**. Then you'll be directed to find and enter your "resting heartbeat rate," the before-exercise heartbeat rate. There are two body points where the pulse can easily be taken. The one we're probably most familiar with is on the inside of the wrist, just below the large hand muscle at the base of the thumb. The other pulse point is at the throat. Just below the jaw line and on either side of the esophagus, you can feel a strong pulse. Try both of these pulse points, and find out which one is easier for you to use.

The computer helps you time the pulse-counting routine (ten seconds) by sounding a tone that tells you to start counting and then giving you another tone to stop. After the second tone, type in the number of beats you counted. and press enter. The computer will then compute and show you your Target Training Value, using the following formula:

$$TTV = 0.6 (220 - YOUR\ AGE - RESTING\ RATE) + RESTING\ RATE$$

Then you'll see a chart of maximum after-exercise pulse rates for certain age groups:

Age Group	Pulse Rate
13–29	170
30–39	160
40–49	150
50–59	140
over 60	130

Remember, these are "average" guidelines. Discuss this chart with your doctor and follow his advice in setting the safe maximum pulse rate you want to reach during exercise.

Next, you'll be directed to select a level and perform the exercises. After you've completed the exercises illustrated by the figure on the screen, you'll be asked to take your pulse again and enter your after-exercise pulse rate. This evaluation compares your after-exercise pulse rate to your Target Training Value and helps you determine whether or not you are using the correct level and pace in your conditioning program.

Reviewing the Exercises   If you want to review all the exercises in the program before starting out on your own conditioning program, select "A Look at Exercises" by pressing **3** when the main selection list appears on the screen. Next, select the category and level you want. After the first exercise appears on the screen, you'll be able to scan through all the exercises in order just by continuing to press **ENTER**. The small figure on the screen demonstrates the correct positions for each exercise, and the number of times the exercise should be repeated is shown on the lower part of the screen.

A CUSTOMIZED EXERCISE PROGRAM FOR YOU

Any successful exercise program must meet certain criteria. Most important, it must safely provide the physical conditioning you need, and it must be performed with some degree of regularity. By following a few simple guidelines, you can easily plan *and maintain* the program that will be most successful for you.

1. Choose the time of day that suits you best for your exercise program, and try to exercise at that time every day. Some people prefer to exercise as soon as they get up in the morning, while others are more comfortable with an evening program. Whichever you choose, exercising at the same time every day will help make these sessions a regular part of your daily routine. We do recommend that you wait about an hour after meals before exercising; aside from that, the choice of time is up to you.

2. Select the beginning level that's right for you. The exercises in the Physical Fitness module are divided into two categories, men's and women's, with five progressive levels in each category. If you haven't exercised in a while, you'll probably want to start at Level 1. At first, however, don't feel that you must do each exercise the specified number of times. It's important to start slowly and build up your endurance gradually. Nothing is more discouraging to a regular exercise program than stiff, sore muscles!

A good way to begin is to go through the Evaluation sequence outlined above. First find your Target Training Value. Then choose a level you think you'll be comfortable with and do the exercises. Try to pace yourself evenly as you perform each exercise − don't "gallop" through the first few and "crawl" through the rest. If you have trouble keeping up with the tones and the figure on the screen, drop back a level.

You can then use the pulse-rate evaluation after the exercises to help you decide whether or not you have selected the right level for your present physical condition. (You may also choose to measure your pulse again when you've completed the circulatory conditioning.)

3. Think of each level as an intermediate goal or "plateau" you want to reach in your conditioning program. The object is to build gradually and progressively until you are comfortable with the exercises at each level and then to move on to the next. Your final goal may or may not be Level 5. Decide — with your doctor's advice — on the long-range conditioning goal you want to achieve, and work toward that goal.

4. Learn to know — and listen to — the "stress signals" your body gives you. Extreme breathlessness (especially if you're still out of breath after ten or more minutes of rest), dizziness, a feeling of weakness or lightheadedness, very sore muscles the following day — any of these signs could be your body's way of telling you to slow down. Heed its good advice!

5. Be consistent in your exercise program, but *don't* exercise if you are ill. Wait until you've recovered. If necessary, drop back a level when you restart your conditioning. You'll quickly make up any ground you've lost, and it will be well worth the wait!

6. Choose the circulatory conditioning option that you enjoy most. In addition to the three that are shown on the screen, don't forget other outdoor activities that can take their places — swimming, bicycling, walking.

7. Use the Evaluation Sequence periodically to measure your progress and to determine when you should advance to the next level.

**Exercising:
A Family
Activity**

You and your family may enjoy designing and using an exercise program that you can participate in together. You can do this easily, even though you may each be at a different level currently, by adjusting the number of times an exercise is done.

One note of advice: Younger children usually get the physical exercise they need in their normal play activities. We do not recommend this exercise program for children under thirteen years of age. (Exercises for pre-teens should be tailored to their specific needs and goals.)

The Exercises There are two types of exercises included in the Physical Fitness module. The first consists of ten calisthenics, designed to stretch and "loosen" the muscles and to strengthen the large muscles of the arms, legs, back, and abdomen. The second type, running in place, rope skipping, and distance running, are aimed toward circulatory conditioning. That is, they increase your heartbeat rate to a level that will improve circulatory and respiratory efficiency.

CALISTHENICS

Exercises	Men's Levels					Women's Levels				
	1	2	3	4	5	1	2	3	4	5
Wing Stretcher	8	15	15	15	15	5	10	15	15	15
Toe Touch	8	15	15	15	15	5	10	15	15	15
Knee Lift	5	10	10	10	10	5	10	10	10	10
Body Bender	7	10	10	10	10	7	10	10	10	10
Sprinter	12	20	28	36	50	8	12	18	25	35
Arm Circle	7	9	12	13	16	7	9	12	13	16
Sit Up	5	12	20	30	40	14*	10	15	20	25
Flutter Kick	15	20	25	30	40	10	15	20	25	30
Leg Raise	12	16	20	20	20	5	10	16	20	24
Push Up**	4	10	20	30	50	5	10	20	24	31

*Note that the first level of Sit Ups for women consists of Head and Shoulder Curls, rather than full Sit Ups.

**"Knee Push-Ups" are provided in Women's Exercises.

If you need to stop and rest a few seconds during any of these exercises, just press the space bar. The activities will stop, and "Waiting" appears on the display screen. When you're ready to resume exercising, press the space bar again. If you've waited more than two minutes, the program will back up to the previous exercise. Otherwise it begins again with the exercise you were doing when you first pressed the space bar.

At the end of the calisthenics sequence, there is another pulse-rate measurement. You'll be asked to take your pulse, type in the number of beats you counted, and press **ENTER**. If your pulse rate is within your own normal limits. you may then choose the circulatory conditioning you prefer.

CIRCULATORY CONDITIONING OPTIONS

Activity	*Time*
1. Combination of running in place and jumping exercises	6 minutes
2. Combination of rope skipping and walking	6 minutes
3. Distance running	Distance and time specified by level

The object of circulatory conditioning exercise is to raise your heartbeat rate to (or slightly above) your Target Training Value and to keep it there for a sustained period of five to ten minutes. You'll notice that both the running-in-place and rope-skipping sequences are to be done for six minutes at every level. The effect you want to obtain at different levels is controlled by the amount of effort you put into these activities and the pace at which you do them. For example, if you're running in place at Level 1, assume an easy pace at first and then gradually

increase the rate and the height you lift your knees. By the time you're exercising at Level 3, your feet should be lifted about four inches off the floor at each step. By Level 5, you should be virtually sprinting throughout the whole six minutes.

You may want to substitute other activities — walking, swimming, or bicycling, for example — for the three shown above. By all means, choose whichever activity you prefer, or alternate among several. On days when the weather is good, select an outdoor activity, if you like. Then, on cold or rainy days, run in place or skip rope indoors. *Just remember that any circulatory conditioning exercise you choose should raise your pulse rate to or above your Target Training Value for a period of five to ten minutes.*

(*Note:* Since sustained exercise is important for effective circulatory conditioning, you can't use the space bar to "wait" during these sequences.)

After you've completed the circulatory conditioning you choose, you'll again be asked to evaluate your heartbeat rate. Then the computer will instruct you to "cool down" gradually by walking until your heartbeat rate is under 100 beats per minute. (You'll find that the "cool-down" time you need lessens gradually as you increase your heart/circulatory capacity.) Walking during the "cool-down" period helps to restore blood flow and metabolism to normal and to prevent your muscles from becoming stiff and sore.

The exercises used in the Physical Fitness module are common ones, and you've probably already been introduced to them at some point in your life. However, let's review each one briefly.

TEXAS INSTRUMENTS
HOME COMPUTER
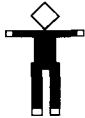
1. Wing' **Stretcher:** Stand up straight with your elbows raised to shoulder height and your fists clenched lightly in front of your chest. At the count of 1, thrust your elbows backwards, holding this position and keeping your back as straight as possible. At the count of 2, return your fists to the starting position.

2. Toe **Touch:** Stand up straight with your arms at your sides and your feet slightly apart. At the count of 1, bend from the waist (knees straight) and try to touch your feet. (Go down until you feel mild discomfort in the back of your upper legs. Hold at this point.) At the count of 2, return to the starting position.

3. Knee **Lift:** Stand erect with your feet together and your arms at your sides. At the count of 1, raise one knee as high as you can. Grasp your leg with your hands, and pull the knee close to your body, keeping your back straight. Return to the starting position at the count of 2. Repeat the procedure with the other knee.

4. Body **Bender:** Stand erect with your hands interlaced behind your neck and your feet about 18 inches apart. On the count of 1, bend your body (from the waist up) to the left as far as you can. At the count of 2, return to the starting position. Then repeat to the right.

5. Sprinter: Squat with your hands on the floor, your right knee drawn up under your body, and your left leg extended out behind you. At the count of 1, reverse the position of your feet, so that your left knee is flexed and your right leg extended. Reverse positions again on the count of 2.

Note: The five exercises above are intended to "warm" up and stretch some of your major muscles gradually. The secret is to "stretch and hold" slowly and smoothly. The remaining five exercises help to tone and strengthen the large muscles of the arms, legs, back, and abdomen.

6. Arm Circle:

Stand up straight and hold your arms out to the sides at shoulder level. First move your arms backwards so that your hands "draw" circles in the air. After the prescribed number of times, reverse the procedure and "draw" forward circles.

7. Sit Up:

Lie on your back with your knees bent. Interlace your fingers behind your head and raise yourself to a sitting position at the count of 1. On the count of 2, lower yourself to the starting position. Try to make these movements as smoothly as possible. (At Level 1 of the women's exercises, do Head and Shoulder Curls instead of full Sit Ups. Lie flat on your back with your legs straight. At the count of 1, raise your head and shoulders off the floor; return to the starting position at the count of 2.)
(*Note:* If full Sit-Ups cause any back pain, substitute Head and Shoulder Curls, regardless of level or sex.)

8. Flutter Kick:

Lying on your stomach with your arms straight at your sides and your hands placed under your thighs, arch your back and flutter-kick your legs and feet. Try to kick primarily from the hips, flexing the knees only slightly.

9. Leg Raiser:

Lie on your right side with your right arm extended above your head and your head resting on your arm. At the count of 1, raise your left leg as high as possible. Return to the starting position at the count of 2. Repeat this action the prescribed number of times; then turn over on your left side and repeat with your right leg.

10. Push Up:

(Men) Lie face down with your elbows flexed, your hands flat on the floor below your shoulders, and your legs straight. On the count of 1, push your body off the floor so that your arms are straight and your weight rests on your hands and toes. At the count of 2, lower your body until your chest just touches the floor. Try to keep your back and legs straight, and don't lie on the floor between lifts.

(Women) Same as above, except that your knees are bent and your feet are raised off the floor. On 1, your weight will rest on your hands and knees. Keep your back as straight as possible.

As you do these exercises, a figure on the screen performs them with you. Also, the number of times you are to do each exercise appears in the lower part of the screen. These, and the tones you hear, help to pace you through the whole program at your chosen level. Remember, if you have trouble doing the number of repetitions called for, you probably need to go back at least one level.

Included in the running-in-place sequence are several jumping exercises:

1. Straddle-Hop: (Jumping Jack)
Stand erect with your hands at your sides and your feet together. At the count of 1, make a single jump, swinging your arms out and up until your hands touch over your head and placing your feet about 16 to 18 inches apart. On the count of 2, jump back to the starting position.

2. Squat-Thrust:
Stand up straight with your hands at your sides and your feet slightly apart. On the count of 1, squat and place your hands flat on the floor. On 2, kick both feet straight out behind you so that your weight rests on your toes and hands. At the count of 3, return to the squatting position, and on 4, stand up straight in the starting position.

3. Scissors Hop:
Stand erect with your arms at your sides and your feet slightly apart. At the count of 1, swing your right arm and leg forward and your left arm and leg backward. On the count of 2, reverse the position so that the left arm and leg are forward and the right arm and leg are back. Keep repeating this procedure smoothly and steadily.

Physical Fitness

SPECIAL FEATURES

Tones   "Counting" tones help pace you through each exercise.

Space Bar   If you want to rest during any of the exercises, just press the Space Bar. The activity will stop, and the screen will show the word "Waiting." Pressing the Space Bar again restarts the exercise. If you wait for more than two minutes, the conditioning program backs up to the previous exercise.

**Time
Sequence**   The exercise program backs up one exercise for every two minutes of "Waiting" (see "Space Bar"). For example, if you wait two minutes, the program backs up one exercise; if you wait two more minutes, it backs up another exercise, and so on. Eventually (the length of time depends on where you were when you first pressed the Space Bar) the screen will become blank. Touching any key then causes the Physical Fitness title screen to appear.

ENTER   If you have stopped the exercises by pressing the Space Bar and the program has backed up, you may advance by pressing the **ENTER** key. (The Program advances one exercise each time you press **ENTER**.)

SHIFT Q   If you want to leave the conditioning program and use some other part of the computer, hold down the **SHIFT** key and press **Q**. This action instructs the computer to leave the module and return to the main computer title screen. Just remember "Q" for "quit."

CARING FOR THE MODULE

These modules are durable devices, but they should be handled with the same care you would give any other piece of electronic equipment. Keep the module clean and dry, and don't touch the recessed contacts.

> *CAUTION:*
>
> The contents of a module can be
> damaged by static electricity discharges.

Static electricity build-ups are more likely to occur during the cold winter months (or in areas with very dry climates) when the natural humidity of the air is low. We've all had the experience of walking across a carpet, reaching for a metal doorknob, and having a quick, painful spark jump from our fingertips to the metal surface. This is static electricity. To avoid possible damage of the module, just touch any metal object (a doorknob, a desklamp, etc.) before handling the module. If static electricity is a problem in your locale, you may want to purchase a special carpet treatment that reduces static build-up. These commercial preparations are usually available from local hardware and office supply stores.

IN CASE OF DIFFICULTY

If the module activities do not appear to be operating properly, return to the master title screen by pressing **SHIFT Q**. Withdraw the module, reinsert it carefully, and press any key to make the master selection list appear. The title of the module should show up in the third position. Press **3** to select the module. (*Note:* In rare instances, it may be necessary to turn the computer off, wait several seconds, and then turn it on again.)

If the module is accidentally removed from the slot while the module contents are being used, the computer may behave erratically. To restore the computer to normal operation, turn the computer console off, wait a few seconds, reinsert the module, and turn it on again.

If you have any difficulty with your Texas Instruments Home Computer or the Physical Fitness module, please contact the dealer from whom you purchased the unit and/or module for service directions.

Additional information concerning use and service can be found in your *User's Reference Guide*.

Quick Reference Guide

Note that this Solid State Cartridge is designed to be used only with the Texas Instruments TI-99/4A Home Computer. Important keystroke sequences are summarized here for your quick reference.

Press	Action
← S, D →	Moves the horizontal lasers left or right.
↑ E, X ↓	Moves the vertical lasers up or down.
Y, Q, V, or .	Fires the lasers.
P, T	Causes the game to pause.
FCTN 8 or 8 (REDO)	Begins a new game at the current level and saves your highest score (indicated by an asterisk (*) which appears next to the word "score").
FCTN 9 or 9 (BACK)	Begins a new game at level one and erases your score.
SPACE BAR	Permits exit and re-entry of crew members.
FCTN = (QUIT)	Returns to the master title screen.

Note: If the optional Wired Remote Controllers are used, move the lever to maneuver the vertical and horizontal lasers, and press the **FIRE** button to fire the lasers.

Texas Instruments logo

TEXAS INSTRUMENTS
INCORPORATED
Dallas, Texas

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Planning to get into an exercise program — but just can't seem to get started? The Physical Fitness Command Module helps you set up a custom exercise program that suits your schedule, lifestyle, and present physical condition. Pictures and audio tones pace you through the program.

Physical Fitness experts agree that the benefits of regular exercise can be many — including improved muscle tone, greater strength and endurance, and reduced tension and stress. Special features of this module make it easy and fun to start and stay with your own tailor-made program:

- Separate categories of exercise for men and women
- Five progressive exercise levels
- Basic calisthenics to "warm up" and strengthen large muscle groups
- Special exercises for conditioning circulatory system — to help build cardiovascular and respiratory efficiency
- Evaluation Sequence — helps you find correct starting level based on your current condition and determine when to advance to next level.

The exercises in the program are based on those found in The United States Book of Family Physical Fitness, prepared by the President's Council on Physical Fitness.

Note: Consult your doctor before beginning any exercise program.

Adds 12K bytes of active memory with stored program to your TI home computer.

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