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## Quick Reference Guide

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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."

### TI-99/4A

\(W),!(E),/(R) -(S),-(D) /(Z),!(X),\ (C)	Controls the movement of the Alpiner from the left side of the keyboard.
\(U),!(I),/(O) -(J),-(K) /(N),!(M),\ (,)	Controls the movement of the Alpiner from the right side of the keyboard.
P or T	Stops the game temporarily.
FCTN 8 (REDO)	Press and hold to start a new game.
FCTN 9 (BACK)	Press and hold to return to the Alpiner menu screen.
FCTN = (QUIT)	Returns to the master title screen.

Note: If the optional Wired Remote Controllers (joysticks) are used, eight directions are available to maneuver the Alpiner; simply move the lever in the desired direction.



## ALPINER

Climb six of the world's tallest mountains with ALPINER. Defeat the odds and defy perilous obstacles as you strive to reach the mountain's summit. If you're fast, you could double your score!

This Solid State Cartridge is designed to be used with the Texas Instruments TI-99/4A Home Computer only. The optional *Solid State Speech*™ Synthesizer (sold separately) must be attached to the computer to activate the speech capabilities of the cartridge.

Programmed by: Janet Srimushnam

Voices by: Aubrée Anderson  
Cliff Easthom

Book developed and written by: Staff members of Texas Instruments Creative Communications.

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## INTRODUCTION

You're struggling against two enemies: perilous obstacles and time. The mountain's summit is within your grasp. But watch out! A rockslide is heading straight for you! Can you move your Alpiner to safety in time?

Alpiner challenges you to climb the brutal terrain of six mountains filled with dangerous animals and falling hazards. As you climb onward and upward, you find that crafty wild animals which dwell in the mountain forests have crept onto the slopes, threatening not only your success, but your survival as well. While you must keep your Alpiner from touching these creatures, several of the mountain beasts tempt you with the possibility of making bonus points, requiring movements of phenomenal speed and accuracy from you.

Carefully, you continue forward. Suddenly, a rockslide appears out of nowhere! You've got to move fast to get out of danger. You're almost at the mountain peak—don't lose control now. You made it! But do you dare attempt to defy the next mountain's perils?

With the Alpiner Solid State Cartridge, each mountain you climb presents obstacles and hazards which must be met with speed, accuracy, and endurance. Some of Alpiner's features include:

- Obstacles in the form of wild animals and terrain.
- Falling hazards which you must avoid.
- Synthesized speech that warns you of imminent danger and comments on your performance.
- A wrap-around playing screen to increase your maneuvering capabilities.
- Daring tactics to obtain bonus points.
- Eighteen increasingly difficult levels of play to test your skills.

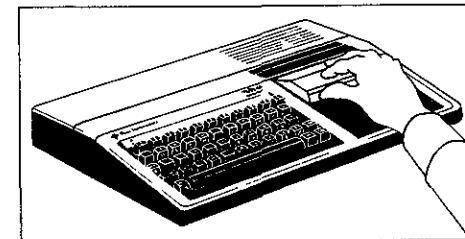
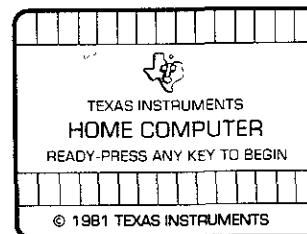
Alpiner is a one- or two-player game which requires speed and skillful manipulation. Movement of the Alpiner on the screen may be controlled by the arrow keys on the keyboard or by the Wired Remote Controllers (joysticks).

Alpiner is designed to work with or without the Texas Instruments *Solid State Speech*™ Synthesizer (sold separately). However, the Speech Synthesizer must be attached to activate the voices of the Alpiner and the commentator. The voices enhance the game by warning you of approaching obstacles, commenting on your performance, and congratulating you for obtaining bonus points.

## USING THE SOLID STATE CARTRIDGE

An automatic reset feature is built into the computer. When a cartridge is inserted into the console, the computer returns to the master title screen. All data or program material you have entered will be erased.

*Note:* Be sure the cartridge is free of static electricity before inserting it into the computer (see page 13).



1. Turn the computer ON, and wait for the master title screen to appear. Then slide the cartridge into the slot on the console.
2. Press any key to make the master title selection list appear. Then press the appropriate number key to select the language version of ALPINER you wish to play.

*Note:* To remove the cartridge, *first* return the computer to the master title screen by pressing **QUIT**. *Then* remove the cartridge from the slot. If you have any problem inserting the cartridge, or if it is accidentally removed from the slot while in use, please see "In Case of Difficulty" on page 14.



## GETTING STARTED

After you select the desired language version of Alpiner, the title screen appears. Press any key to leave the screen, or wait a few seconds and the title screen ends automatically and is replaced by another screen.

First, type either 1 or 2 for the number of players. Next, type the names of each player (up to 10 characters for each name), pressing ENTER after each name is typed.

Now the screen displays the names of the six mountains you must climb—Hood, Matterhorn, Kenya, McKinley, Garmo, Everest—and their respective elevations.

Mountain	Elevation
Hood	3427 M.
Matterhorn	4477 M.
Kenya	5193 M.
McKinley	6194 M.
Garmo	7495 M.
Everest	8848 M.

Directly beneath the mountain elevation chart, the command **PRESS ANY KEY TO GO ON** appears. Press a key and the game begins. Below the Alpiner figure on your screen is an information table. The table lists your current playing level, seconds allotted for the climb, the mountain you're presently climbing, and its height. Your **CURRENT ELEVATION** is displayed—this is updated as you climb.

To the right of your name are three black boots, indicating the number of Alpiners you have for the game in addition to the one on the screen. Your current score is recorded directly to the right of the Alpiners in reserve. At the bottom of the table either your **HIGH SCORE**, or in the two-player option, the second player's score is recorded.

## Moving Your Alpiner

The movement of the Alpiner on the screen can be controlled either from the keyboard or by the Wired Remote Controllers. For convenience in two-player games, movement keys are designated both on the left and right sides of the keyboard.

Left Side Keys	Right Side Keys	
(E)	(I)	Moves the Alpiner upward on the screen.
\ (W)	\ (U)	Moves the Alpiner diagonally upward to the left.
/ (R)	/ (O)	Moves the Alpiner diagonally upward to the right.
- (S)	- (J)	Moves the Alpiner left across the screen.
- (D)	- (K)	Moves the Alpiner right across the screen.
(X)	(M)	Moves the Alpiner downward on the screen.
/ (Z)	/ (N)	Moves the Alpiner diagonally downward to the left.
\ (C)	\ (G)	Moves the Alpiner diagonally downward to the right.

If you are using the Wired Remote Controllers, eight directions are available also. Move the lever forward (toward the FIRE button) to make your Alpiner go up the mountain. Move the lever backward (away from the FIRE button) to make your Alpiner go down the mountain. Right and left movement is controlled by moving the lever in those directions. Control diagonal movement by moving the lever to the position that corresponds to the diagonal direction you desire for the Alpiner.



### **PLAYING THE GAME**

With a watchful eye and a fast hand, you begin your climb on Mt. Hood (Level 1—you always begin playing on this mountain) by moving your Alpiner on the screen. Numerous wild animals inhabit the mountainous terrain that lies before you. Move past them quickly, for when the Alpiner is not in motion on the screen, you lose valuable time. In addition to these perils, you must always be on the alert for falling objects which could send your Alpiner plummeting down the mountainside.

*Note:* To learn more about the levels of game play, see the Levels of Game Play chart in the section "Advancing to Different Levels."

#### **Watch Out!**

A total of eleven obstacles in the form of trees, stumps, brush fires, and wild animals make your climb to the top of each mountain extremely dangerous. Warning tones sound to alert you when danger could be near.

You ascend 46 meters for each upward step your Alpiner takes. Bumping any obstacle, with the exception of the trees, makes your Alpiner fall back at least two steps. Each penalty step knocks you back 46 meters.

If your Alpiner falls down as a penalty for touching an obstacle, the Alpiner could hit another obstacle during this descent. When this occurs, your Alpiner falls all the way to the bottom of the mountain, and you will lose one Alpiner from your reserve.

#### **Mountain Obstacles**

The plant life of the mountains poses the initial threat to your climb. TREES which are scattered all over the mountainside inhibit the Alpiner's movement. Although there is no penalty for bumping into them, you must find a way around them. Bumping into tree STUMPS, however, costs you two steps (92 meters).

BRUSH FIRES are another concern, for they appear when you least expect them. If you go too close to the flames, your Alpiner falls back five steps.

The wild animals in the mountain forests threaten the survival of your Alpiner. They are a crafty lot, for you cannot predict where or when you'll run into them.

At lower mountain elevations, you encounter SKUNKS and SNAKES. The skunk is a dual threat—not only will touching it force you to fall two steps, but also, if you're caught in the skunk's line of fire, you'll go back two steps. Coiled, green rattlesnakes thoroughly infest the mountains. With venomous guile, they send you down three steps if you bump them.

As you climb higher, cunning black BEARS are waiting to knock your Alpiner back six full steps. Huge MOUNTAIN LIONS silently repose in their lairs, waiting to knock your Alpiner back seven steps if you accidentally disturb a resting cat.

Other mountain creatures venture out of the forests and onto the slopes at still higher elevations. BATS are a major obstacle to be avoided at this point. You can detect their presence by observing when their black, crescent-shaped caves appear. They fly out unexpectedly and make you descend five steps.

Scavenging VULTURES also loom ominously against the mountain peaks. You know you're in a vulture's territory when you have its nesting site in view. Only the foolhardy dare to tempt fate by going too near these nests, for the mother vulture jealously guards her infants, and she'll drop a rotten egg on you for disturbing her nest, causing you to fall eight steps!

Wild RAMS also await you near the mountain summits. These sure-footed climbers will zap you down nine steps if you accidentally run into them.

When you near the top of Mt. Everest, you come face to face with the most feared of all the mountain beasts—the ABOMINABLE SNOWMAN—on skis! Treacherous and fast, the SNOWMAN skis toward you and, in the blink of an eye, sends you crashing to the bottom of the mountain.

*Note:* With certain consoles, you may see the Alpiner figure momentarily flash on the left side of the screen just before falling. This does not affect game play.



**Beware, Falling Objects!**



Rockslides



Avalanches



Icefalls

Falling hazards strike terror in the heart of the bravest Alpiner. You must exercise maximum control to avoid being hit by these tumbling terrors—you'll drop to the bottom of the mountain if you're careless!

These falling objects consist of ROCKSLIDES, AVALANCHES, and ICEFALLS. Rockslides appear throughout lower levels of game play. Avalanches and icefalls occur at increasingly difficult levels of game play.

During lower levels of game play, each type of falling hazard descends at a different speed. Rockslides fall slower than avalanches, while icefalls are lightning-fast. However, at the highest levels of game play, all of these hazards may fall upon your Alpiner simultaneously, at any speed, and on any mountain.

You have been warned—these hazards are unpredictable, powerful, and menacing to the most skillful Alpiner!

**Pausing During the Game**

If you wish to stop the game temporarily, press the P or T key. Press any key to resume game play.

**The Two-Player Option**

If you select the two-player option, the game is played just as in the one-player option. Each player climbs a different side of the same mountain with similar obstacles for his or her turn. If one player loses all of his or her Alpiners, the surviving player continues the game until all Alpiners are lost.

**Advancing to Different Levels**

Alpiner has eighteen different levels of increasingly difficult game play to challenge you. The eighteen levels of play are divided into three rounds of six levels each. Each level corresponds to one of the six mountains you must climb.

**LEVELS OF GAME PLAY**

Mountain	Level In Each Round			Elevation
	Round 1	Round 2	Round 3	
Hood	1.....	7.....	13	3427 M.
Matterhorn	2.....	8.....	14	4477 M.
Kenya	3.....	9.....	15	5193 M.
McKinley	4.....	10.....	16	6194 M.
Garmo	5.....	11.....	17	7495 M.
Everest	6.....	12.....	18	8848 M.

Advanced levels of game play are similar to lower levels. After Level 6, all mountain obstacles may be encountered on any mountain. As previously discussed, there is a correlation between mountain elevation and the appearance of obstacles, and this factor remains the same throughout higher levels of Alpiner.

Climbing is much more difficult in Rounds Two and Three because the falling hazards descend more frequently and at higher speeds. At Level 7, you are met with a new falling object, the AVALANCHE, which descends at a faster speed than rockslides. Then, at Level 13 the barrage of incredibly fast ICEFALLS begins. Beware, for at mid-level game play in Round Two, the falling objects begin to aim straight for your Alpiner, requiring your utmost in skill to survive wave after wave of falling obstructions.

**Stopping the Game**

If at any time you wish to stop the game permanently, press QUIT. The screen action stops and the master title screen appears.



**SCORING**

Points are awarded for each upward step your Alpiner makes successfully. The point value for each step is relative to each particular mountain and your present level.

**SCORE CHART**

MOUNTAIN	ROUND ONE	ROUND TWO	ROUND THREE
	Levels 1-6	Levels 7-12	Levels 13-18
Hood	10	20	30
Matterhorn	12	24	36
Kenya	15	30	45
McKinley	20	40	60
Garmo	25	50	75
Everest	30	60	90

*Note:* When your Alpiner falls to the bottom of a mountain for any reason, you do not accumulate points on your way back up that same mountain until you reach the altitude from which you fell on your previous climb.

**BONUS POINTS**

**Bonuses for Beating the Clock**

A bonus of twice the base points for each step is allowed for each second you have remaining on the time recorder when you reach the top of a mountain. For example, if you reach the top of Mt. McKinley in Round One with 10 seconds remaining on the time recorder, 400 bonus points are added to your score (20 x 10 x 2).

*Note:* Time allotted for your climb is not counted down *except* when the Alpiner is not moving. If, during game play, the Alpiner is not moving on the screen, seconds are lost which could be contributed toward bonus points. Therefore, plan your strategy as quickly as possible to avoid losing valuable time.

If you fall to the bottom of a mountain and lose one Alpiner, the time recorder will be reset for the maximum time limit during your new Alpiner's attempt to climb the mountain from which you fell.

Time limits vary for each mountain, but as you advance to different levels, time limits shorten for each mountain. Therefore, it is much more difficult to obtain bonus points as you progress to different playing levels. As the chart below indicates, you've got to move faster to get bonus points!

**TIME LIMITS**

MOUNTAIN	ROUND ONE	ROUND TWO	ROUND THREE
	Levels 1-6	Levels 7-12	Levels 13-18
Hood	60 sec.	45 sec.	30 sec.
Matterhorn	75 sec.	60 sec.	45 sec.
Kenya	90 sec.	75 sec.	60 sec.
McKinley	105 sec.	90 sec.	75 sec.
Garmo	120 sec.	105 sec.	90 sec.
Everest	135 sec.	120 sec.	105 sec.

**Target Bonuses**

Bonus points are also awarded for touching the small green targets that flash periodically in the extended paws of the bears and mountain lions and the uplifted hooves of the rams. Caution: Hitting the target requires that you exercise an extraordinary amount of skill. You must dodge onslaughts of falling hazards while you position yourself for an accurate hit. If you miss the target and touch the animal's paw or hoof instead, you fall to the bottom of the mountain and lose one Alpiner.

A light touch is necessary to hit the target. If you hold the key down too long or the joystick lever in position too long, you may touch the target twice. In this case, you obtain bonus points, but you also fall the given number of penalty steps for the animal you touched. Keep in mind that during this penalty descent, you may bump another object and fall to the bottom of the mountain.

You're awarded a bonus of 500 points for hitting the bear's target, 750 points for the mountain lion's target, and 1000 bonus points for hitting the ram's target.

*Note:* If you fall to the bottom for any reason, you may try for the same target bonuses that you hit on your first ascent if you go back up the same mountain. You are awarded the same point value for hitting the target again.

**New Alpiners**

A new Alpiner is added to your reserve each time you complete a round of game play. Thus, you obtain a new Alpiner every time you reach the top of Mt. Everest.

**CARING FOR THE CARTRIDGE**

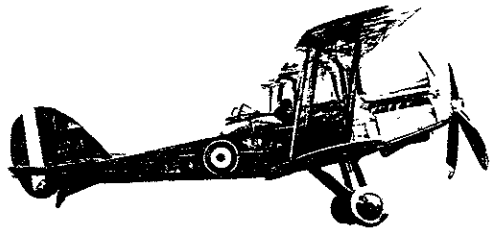
These cartridges are durable devices, but they should be handled with the same care you would give any other piece of electronic equipment. Keep the cartridge clean and dry, and don't touch the recessed contacts.

**CAUTION:**

The contents of a Solid State Cartridge can be damaged by static electricity discharges.

Static electricity build-ups are more likely to occur when the natural humidity of the air is low (during winter or in areas with dry climates). To avoid damaging the cartridge, just touch any metal object (a doorknob, a desk lamp, etc.) before handling the cartridge.

If static electricity is a problem where you live, you may want to buy a special carpet treatment that reduces static build-up. These commercial preparations are usually available from local hardware and office supply stores.



## A. HISTORY

Barely ten years after the Wright Brothers pioneered motorized flight in a fragile structure of canvas, wires, and wood, men had adapted their invention to the needs of war. These new machines were much improved - stronger, faster, and more dependable - but they still bore a great resemblance to their prototype. As soon as it was generally realized that these aerial 'birdcages' made excellent instruments of war, governments around the world were ready to spend more and more money on them, and companies such as Sopwith, Nieuport, and Fokker used that money to progressively improve designs.

World War I was the first war to use many of the machines and methods we associate with modern war. It was also an unspeakable, frightful, bloody mess serving mainly to lay waste to European civilization and decimating its male population. In contrast, however, to the horrors of the trenches, the Air War was clean, somewhat chivalrous, and made good copy. From the newspapers of the time sprang the Air Ace, the ultimate swashbuckler, capable of distracting the civilian public from the pointless stalemate. Although they couldn't quite live up to their press, the flyers were daredevils who often risked their lives and whose exploits, truthfully recounted, were very exciting.

S.P.A.D., the *Société Pour Aviation et ses Dérives*, a French company run by the famous aviator Louis Blériot, shared in the profits spawned by World War I. The Spad XIII, an improved model of the earlier VII, was introduced in April 1917. It was a very stable plane with a more powerful engine and an extra Vickers machine gun. In the hands of the great aces of the time, it reversed the balance of air power once again and gave superiority to the Allies. It was an excellent gun platform, and exceptionally durable, though the engine tended to break down. There were no American pursuit planes used in WWI, and the American aces Rickenbacker and Luke preferred to use Spads when they could get them.

## B. FLIGHT SIMULATOR

When you insert the *Red Baron Flight Simulator* cartridge into the cartridge port in the computer console, the color bar screen will appear. Press any key and the selection menu will appear: 1. TI BASIC 2. RED BARON

Press 2 to play *Red Baron*. You will then see the *Red Baron* title screen with a picture of your Spad aircraft. Press any key to continue. The next screen allows you to involve Fokker pursuit planes: RED BARON? Y YES N NO

Press Y to include Fokker pursuit planes and N to not include them. Novices are advised **not** to include these proficient fliers.

The next screen asks where you wish to start the simulation:

- |                    |                    |
|--------------------|--------------------|
| 1. FRENCH AIRFIELD | 3. GERMAN AIRFIELD |
| 2. TRENCHES        | 4. EIFFEL TOWER    |

Press key number to make your selection. Selecting 1 starts you on the ground. All other selections start you in the air at 2000 feet.

### 1. How to Fly

The following is a limited introduction to flight. Basic concepts will be discussed in order to prepare for playing *Red Baron*. However, controlling an airplane is not a simple task, and the reader is encouraged to follow up this introduction with further reading on the subject. We recommend *Stick and Rudder* by W. Langewiesche (McGraw-Hill, 1944) for a comprehensive yet entertaining book for beginners.

An airplane in flight is subject to four principal forces. These are lift, drag, weight, and thrust. Lift is made by the motion of the wings through air and pushes in the direction of the top of the plane, generally up. Weight counters this force, pulling downward toward the earth. Thrust is the force generated by your engine turning a propeller; it acts to push the plane forward. Drag counters this force - it is the air resistance friction that acts in the direction opposite the thrust and slows the plane.

A wing works through channeling the air that passes by it in specific ways that generate lift. Contrary to popular belief, the downwash produced by the wing is more important in generating lift than the pressure imbalance produced as air flows around the wing. Lift can be increased by increasing airspeed or by increasing the angle of attack (the angle at which the wing meets the air). When the angle of attack exceeds 18 degrees or thereabouts, the downwash of the wing is dissipated by increasing turbulence and a stall, the condition in which the wing loses its power to lift, occurs.

Because the airplane is made up of many complicated surfaces and has an uneven distribution of weight, the behavior of the plane can not be simply described. However, some general characteristics apply to most planes, and the Spad XIII in particular. The heaviest part of the plane is



the engine, and thus the plane's center of gravity is in front of the center of lift. This means that counterbalancing of forces on the plane will eventually bring you back into stable, level flight. If you slow down, the nose of the plane will drop, and you will gain speed as you lose altitude. Conversely, if you increase speed, your nose will rise and the increased angle of attack will slow the plane down. Thus, if your wings are parallel to the ground and you have sufficient airspeed, you needn't worry about losing control.

Turning the airplane always involves banking the wings. On each wing there is a control surface which allows you to independently change the nature of the wing. This increases the lift on one wing and decrease the lift on the other, causing one wing to rise and the other to drop. When this happens, a number of things also happen, all of which contribute to the turning of the plane. The principal cause is that the normally vertical component of lift has been shifted horizontally, and thus the plane is lifted sideways, i.e. it turns. As the plane banks, however, and the total lift is not directed upward, the nose will drop and you will lose altitude.

How the control surfaces of the plane affect the flow of air will be discussed in more detail below.

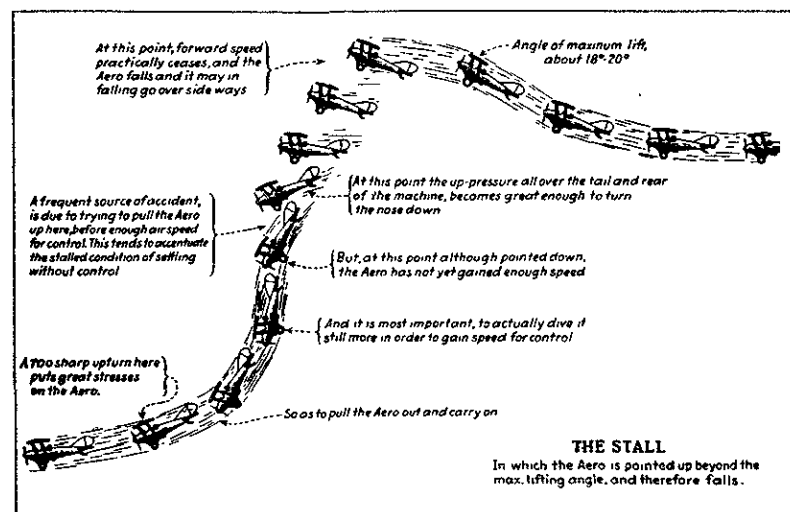
## 2. Control of the Spad

The flight of a plane occurs, obviously, in three dimensions. In order to better describe the movement of the plane along these three axes, the terms yaw, pitch and roll are used. Yaw is rotation around the vertical axis of the plane, rotating left and right. Pitch is rotation around the axis that passes through the wings, moving the nose up and down. And Roll is rotation around the axis that passes through the fuselage, moving the wings up and down.

### a) Lateral Controls - Roll and Yaw

As discussed above, turning the plane involves changing the degree of Roll in order to change the Yaw of the craft. The ailerons, flaps on the trailing edge of the wings which can be raised and lowered, are used to do this. They are controlled by means of the stick. When the stick is moved to the right, the right aileron goes up and the left aileron goes down, resulting in a right turn. When the stick is moved to the left, the opposite happens.

The rudder, though theoretically a direct way to control the Yaw, should only be used in conjunction with the ailerons. Turning the plane with the rudder alone is slow and the increased drag will cause the plane to lose altitude.



### b) Pitch Controls

The current airspeed and the position of the nose are interrelated phenomena; thus the controls you have to change the pitch of the airplane, the throttle and the elevator, can control either the airspeed or the nose's position. When the throttle is raised, increasing the RPM of the engine and the speed of the propeller, the nose will go up and the altitude will increase. Contrary to expectations, unless you hold the nose down using the elevator, speed will decrease. Lowering the throttle causes the plane to lose altitude and thus speed up.

The elevator is also controlled with the stick. Pushing forward on the stick causes the airplane to drop its nose, lose altitude, and gain speed. Pulling back on the stick causes the airplane to raise its nose, gain altitude, and lose speed. Altitude gains due to elevator effects are short-lived because of the loss of airspeed, which causes the nose to drop (as long as the stick is not still being pulled back). The best way to stall an airplane is to pull back on the stick until the airplane's speed is less than its stated stalling speed.

### 3. Keyboard Interface

The *Red Baron Flight Simulator* is controlled either entirely from the keyboard or from the keyboard with Joystick 1 substituting for the stick movement keys and fire button. Two commands may be input at one time, one from the left side of the keyboard (or the joystick) and one from right side. Press the key until you see the appropriate reaction on the screen.

The stick movement keys are **E-S-D-X-W-R-Z-C** as illustrated in Figure 1. **A** is strong left, **F** strong right, and **V** strong back stick for acrobatic moves (the joystick has no corresponding positions to accomplish these maneuvers). You will be able to see the stick move in response to your actions.

The view keys are **1-2-3-4-5-6**. They are also illustrated in the accompanying figure. You may change the view at any time, and for strategic purposes it is important to look around for enemy planes. The **U** key presents an unobstructed view from the front only. To restore the plane on the screen press any one of the view keys. Firing is possible only when the forward, instrument panel view is on the screen. If a view key is pressed continuously you can peek through the planes' wings and fuselage.

When you look up (view key **5**), forward is down on the screen. When you look down (view key **6**), forward is up. Picture the pilot actually looking up or down from his seat in the cockpit.

The throttle keys are **7-8-9-0** as illustrated below. **7** and **8** raise and lower the throttle in increments. **9** gives full throttle, and **0** stops the engine. (Even at 0, air pressure may keep the propeller moving and cause the engine to run.)

The rudder keys are **,** and **.'**

The fire key is **Q** (or Joystick 1's button). The fire key only works from a forward, instrument panel view. You can not fire the guns and move ailerons at the same time, but the rudder can be used for turning. **B** drops a bomb. For bombing, it doesn't matter which view you are seeing, but to see the bomb drop you must look out of the bottom. Altitude must be less than 1000 feet to see the bomb explode.

The kill program key **K** works only if you are safely on the ground. It will display the Final Score screen and end the game.

At any time, **FCTN +** (Quit) can be pressed to halt the simulator and return to the master title screen.

The alpha lock key must be up to use Joystick 1 for input.

### 4. Instrument Panel

In the *Red Baron Flight Simulator*, the screen represents the view of the pilot sitting in the cockpit. In addition to the wings, struts, and guns of the plane, the view includes an instrument panel and the outside scenery. The instrument panel consists of four gauges and two mechanical devices. The gauges with their readout markings are illustrated in Figure 2.

The altitude gauge, on the left, is a barometric device corrected for relative altitude. It has two hands, one black and one white. The black hand indicates thousands of feet and the white hand indicates hundreds. The readings go from 0 to 1,000 feet and 0 to 20,000 feet. Thus if the gauge has the black hand pointing straight down and the white hand pointing at 3 o'clock, the plane is at altitude 10,250 feet.

The air speed gauge, on the right, has one hand and registers from 0 to 200 knots. If the airspeed drops below 40 knots a stall is likely.

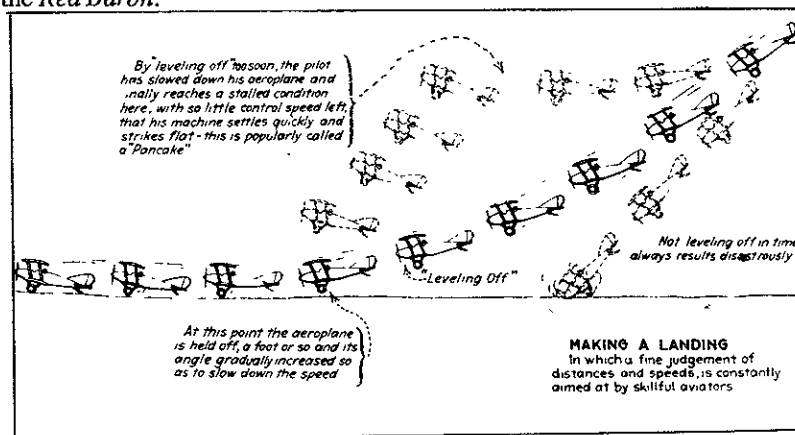
The compass, on top, is a standard magnetic device corrected for the mass of the engine. North is up and East to the right.

The fuel gauge, on the bottom, reads full at about 10 o'clock and empty when pointing straight up. It moves counterclockwise.

The throttle is the handle below and to the left of the instrument panel. Top is 1200 RPM. It is pegged at 200 RPM although the throttle changes in increments of 100 RPM. Up increases throttle, down decreases.

The stick is located in the bottom center of the display. It moves to 9 different positions to indicate the appropriate action. Shorter means pulling the stick back, longer means pushing forward on the stick.

The two black rudder pedals on either side of the stick move according to the position of the rudder. If you press **<** for left rudder, the left rudder pedal goes up and the right pedal goes down. The opposite happens if you press **>** for right rudder. Using rudder **with** aileron controls gives a faster, tighter turn for fighting the *Red Baron*.



## 5. Objects on Ground and in Air

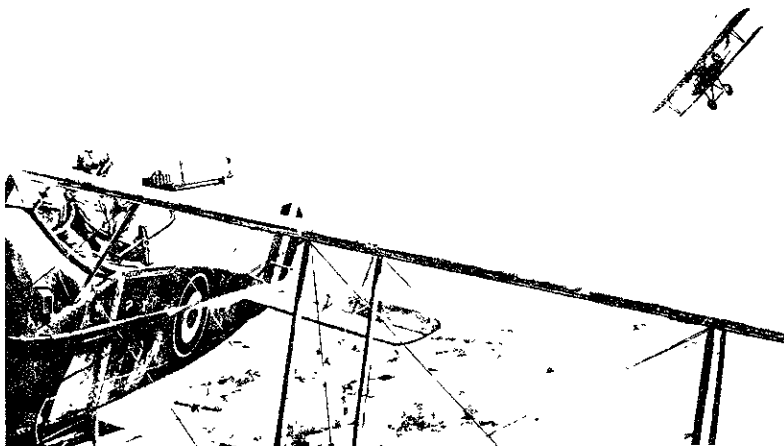
The scenery in the *Red Baron Flight Simulator* is, of necessity, somewhat stylized, although full 3-D is always observed. The horizon is a dark green line with the white line of clouds always above and parallel to it. In the sky are scattered higher clouds - these are small white flecks until you get close to them, when they appear as parallel, white lines. The sun, in the Southeastern sky, is a yellow burst of lines.

On the ground, there are:

- your plane's shadow - a dark green cross, always opposite the sun from you
- trees - dark green, at regular intervals
- your airfield - dark green parallel lines with one black hangar
- enemy airfields - has two hangars and a parked plane
- trenches - jagged dark yellow lines, run infinitely north-south
- Seine R. - dark blue, runs infinitely north-south
- Eiffel Tower - black multi-lined tower on rectangular park near Seine
- French villages - green multiple boxes with church steeple at center
- destroyed villages - as above but black
- hills - polygonal green shapes, may be faintly seen from a great distance

The skies are infested with Hunnish airships.

- German two-seaters - black, defended by observer machine gun:
    - emit smoke, fall, explode against earth when shot down
  - observation balloons - black, cigar shapes:
    - destroyed like German two-seaters except defended by flak units on ground
  - flak explosions - yellow/red bursts in the vicinity of balloons and enemy airfield
- Your bombs - black, explode against earth, destroy German hangers
- explosions - red and yellow, may be seen if within 1000 ft.
  - damage to airships and hangars is indicated by white line of smoke



## 6. First Flight

### a) Take Off

To take off, press key **1** to get a front view with instruments. Apply full throttle by pressing the **9** key until you hear the motor rev. Watch the airspeed indicator dial move to show your increasing speed. When it reaches 100 knots (straight down), pull back on the stick (**X** or back on the joystick) until the screen stick moves, then let go. As you lift off, the runway will drop away. The altitude gauge will show your rising height. Depress the throttle a notch with **7** key for a controlled ascent. Shift to the rearward view by pressing the **4** key and you can see the airfield falling behind. Don't attempt any turns until you have attained at least 100 feet of altitude.

### b) Climbing

Look out your front view and notice that the dark green horizon line is below your gunsight. This means that you are climbing. The proper way to climb is by increasing throttle - the elevator is really only a way of pointing your nose for temporary gain or loss of altitude. If you raise your nose too much with the elevator, your airspeed will drop dramatically and you will stall. The proper use of throttle and elevators to control altitude is a difficult skill and will come only upon sufficient time in the air. Continue your ascent to 3000 feet.

### c) Cruising

Once you have reached 3000 feet, you will level off by lowering the throttle (key **7**) three notches to 800 RPM. Although the plane may oscillate a bit, eventually the gunsight (and top of tail) will line up with the horizon. The plane will be in level, straight flight at 120 knots.

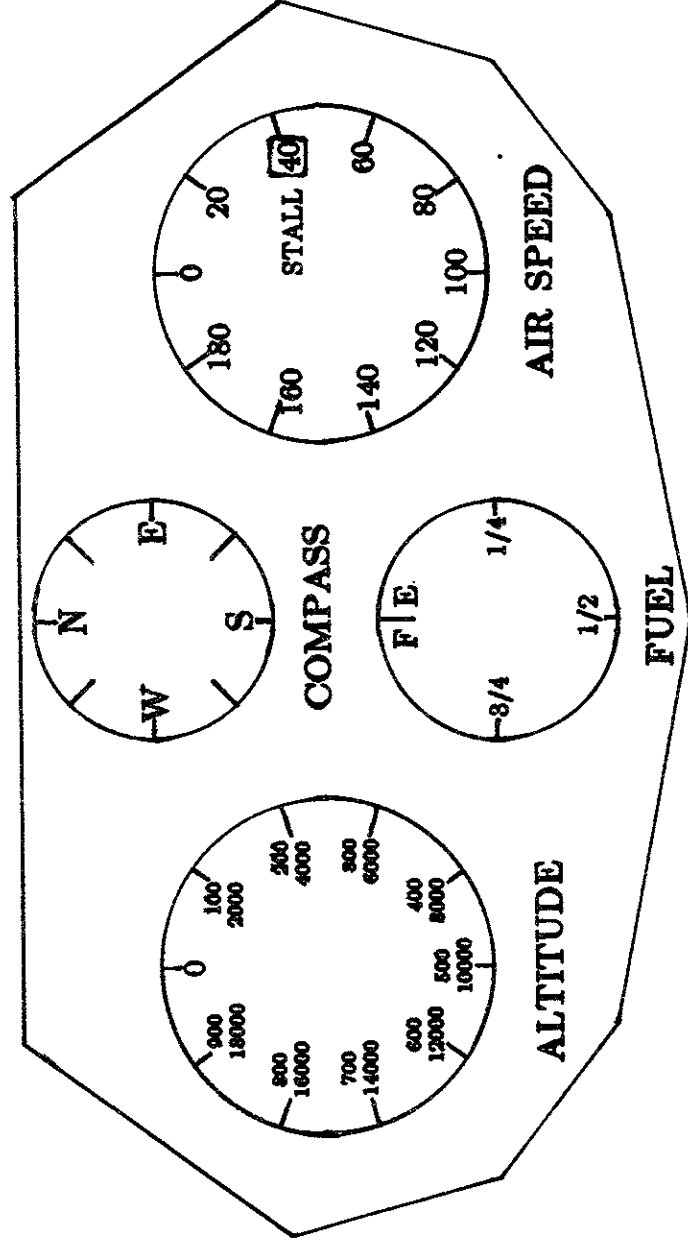
### d) Turns

To turn, as discussed above, it is necessary to raise one wing and lower the other using the ailerons. Press the **S** key (or move the joystick to the left) until the screen stick moves to the left, and then release. The plane will begin to bank left. Notice the clouds are moving to the right as you change direction. Your nose will drop a bit from its previous position as you lose lift. Continue in this slow turn until you are headed south. Press the **D** key (joystick right) until the stick moves and level off. After a few moments you should see your airfield near the horizon it will appear only as a dark green spot.

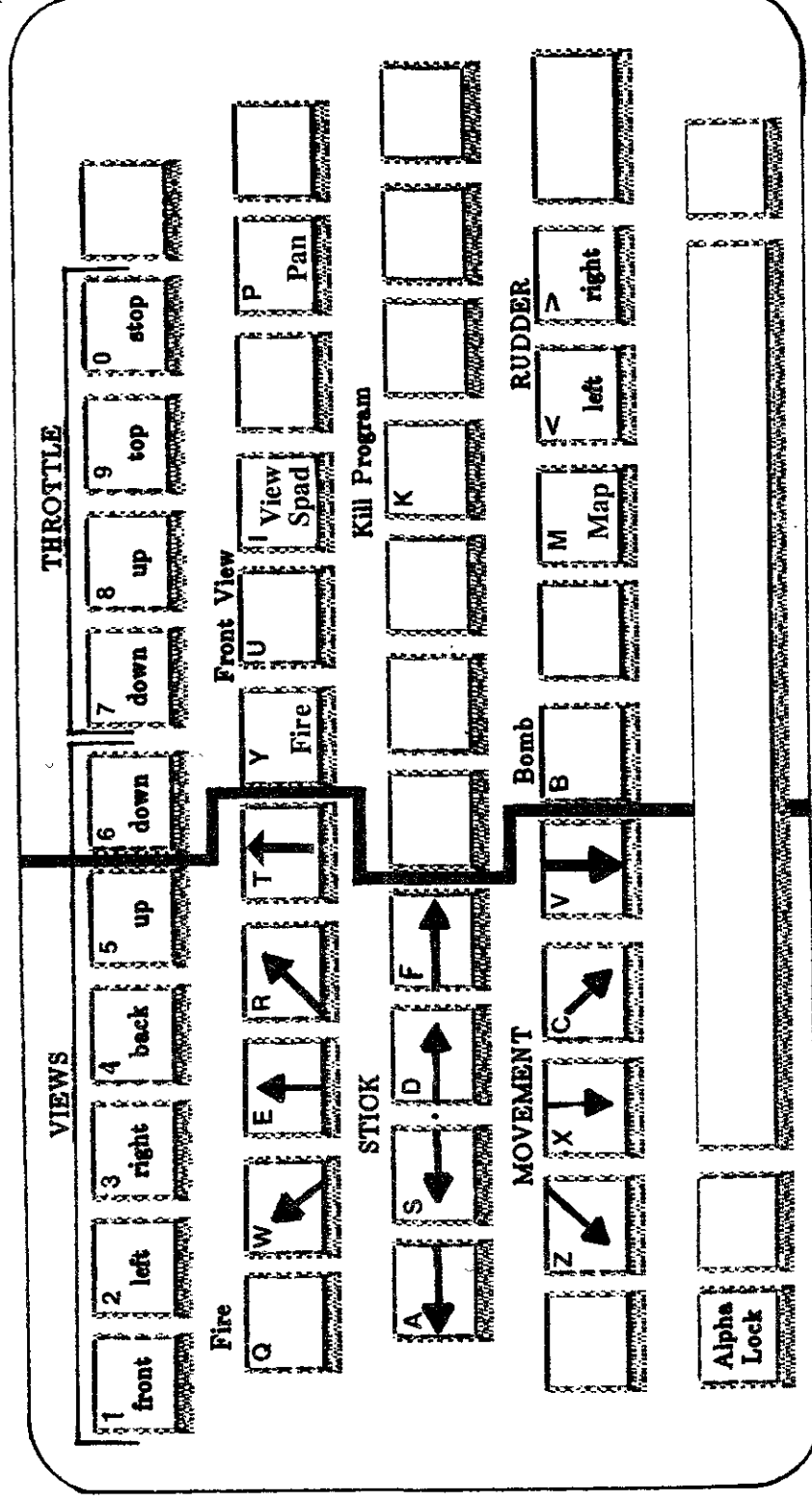
### e) Descending and Landing

Use the ailerons to move the airfield to the center of the view, being careful not to let the plane bank too far right or left. The rudder can be used for fine adjustments, but remember using it comes with a penalty of lost airspeed. Lower the throttle four more notches and keep the field in your crosshairs as much as possible. Press the **U** key for an unobstructed view and the **1** key to return instruments. Lower the throttle if the near end of the airfield is below your crosshairs. As the airfield comes up, lower the throttle even more to keep

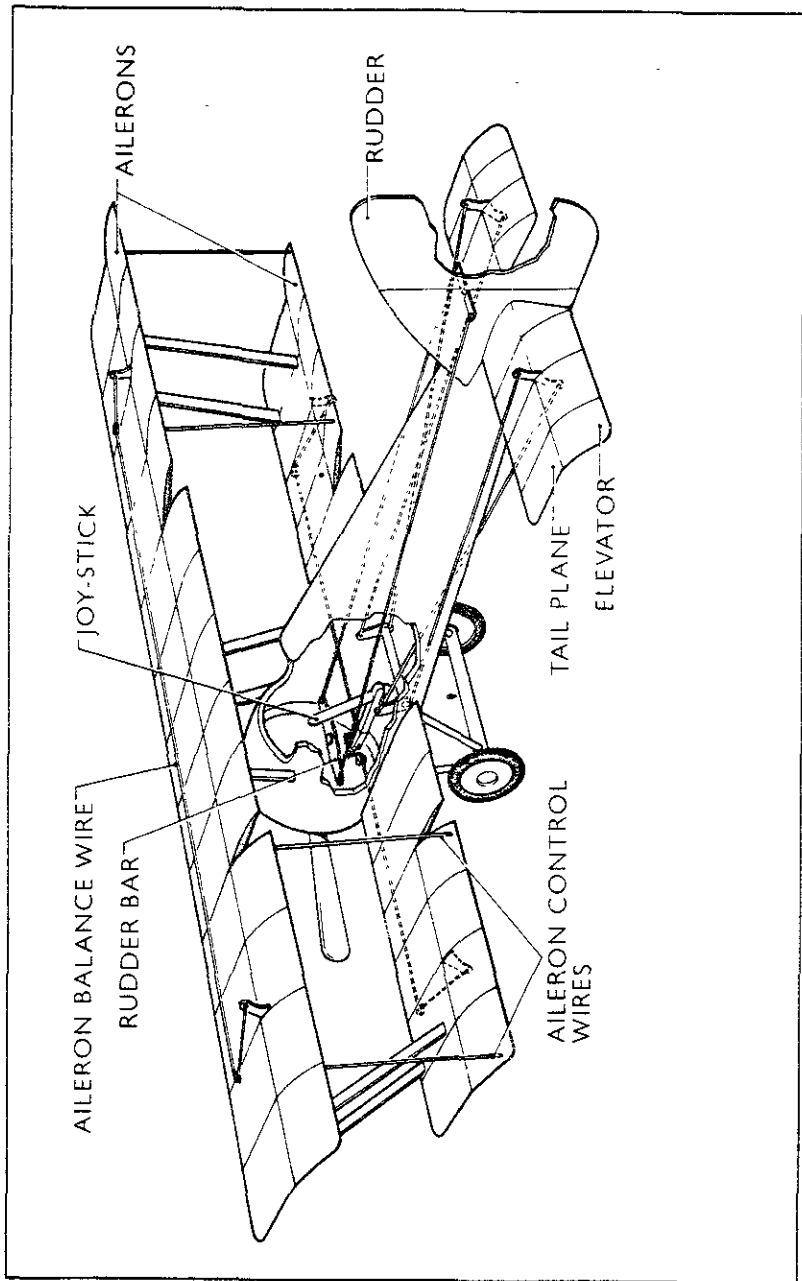
# RED BARON Instrument Panel



# RED BARON Keyboard Template



Alpha Lock must be up to use Joystick 1



the approaching near end in your gunsight. Make sure that your wings are level. Pull back on the stick at fifty feet once to keep your airspeed less than 100 knots and your nose up. It isn't necessary to land precisely parallel to the airstrip since it's all level ground. You've landed when your altitude is zero and your nose rises abruptly. You must taxi to an area near the hangar and let your speed drop to zero. When you have done this the plane will be serviced, fuel, bombs, and ammunition replenished, and the plane will move to the starting point, facing due north.

Congratulations! You have completed your first flight.

**7. Acrobatics**

**a) Turns and Extreme turns**

Turning the Spad is not difficult to do if you just keep in mind that you will lose lift at a greater and greater rate the greater your degree of banking. At full throttle, you can turn 40 degrees (right or left stick x 5) without losing altitude, but turns of 45 degrees or more require you to pull back on the stick to stay level.

Extreme turns can be disastrous - you can lose control of the plane and go into a spinning dive. Don't use the **A** and **F** keys (hard left and right) unless you are an experienced pilot attempting a barrel roll or other acrobatic maneuver

**b) Climbing and Stalling**

The best way to climb is just to put the throttle up. If you pull back on the stick excessively, your angle of attack will increase and you will lose airspeed. The conditions for a stall are met when your airspeed goes below 40 knots. When you stall your plane will lose its lift catastrophically and will plunge down and sideways. Depending on the conditions, this plunge may or may not evolve into a vrille or wild downward spin. The best way to handle these out-of-control situations is to lower the throttle first and try to turn counter to the spin. If you pull up first, it will only make the situation worse.

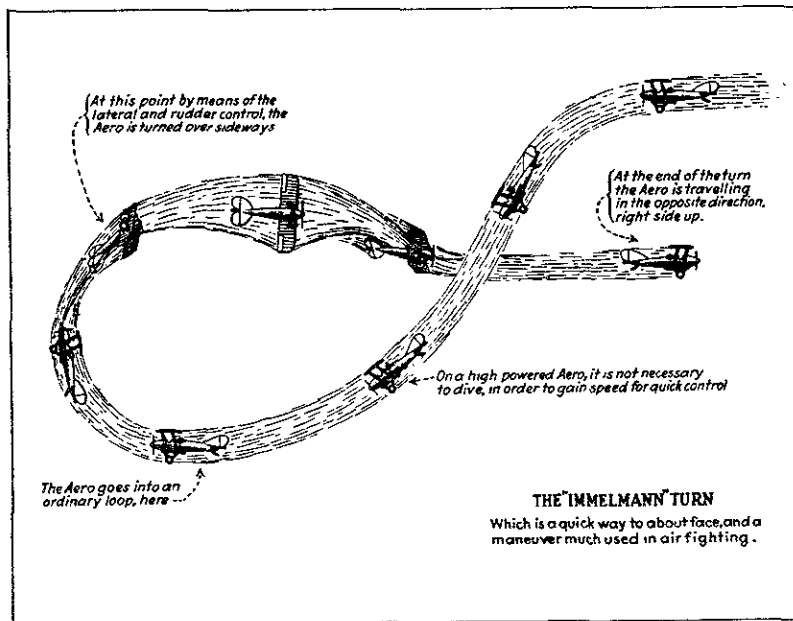
High throttle wastes gas - the best policy is to climb to the altitude you want and lower the engine.

**c) Barrel Roll**

A barrel roll is when you use your ailerons to roll the aircraft through 360 degrees. This is a relatively simple maneuver if you have your speed up. To do a barrel roll, top your throttle, put your nose down with the crosshairs well below the horizon, until your speed reaches 150 knots. Let your nose come up until the cloud line is below your guns. Push the **A** key for a left barrel roll and **F** for a right barrel and don't let up until you're level again.

**d) Loops**

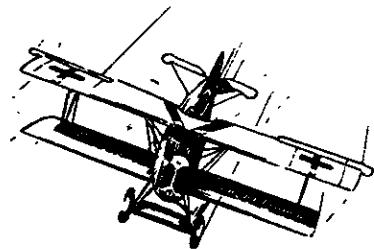
The simple loop is also fairly easy. Get to top throttle, push the stick forward until you reach 150 knots, and then press the **V** key until you've gone all the way around. For multiple loops, keep the **V** key down. Outside loops are impossible in a Spad due to the primitive engine.



#### e) Immelmann turn and Split-S

The Immelmann turn, developed as a tactical maneuver for dogfights, involves making a half loop up followed by a half roll to return to level flight. At top throttle, push nose down until you're at 150 knots, press the **V** until you see the reversed horizon in front of you, hit hard aileron, and roll to upright position. If your nose is pointed down pull back on the stick slightly.

The Split-S is a half-roll followed by a downward half loop. Top the throttle, push the nose down to 150 knots, then let the nose rise until it's just above the horizon. Hit hard aileron (**A** or **F**) to get the half roll - wait a second when you are upside down and then pull back on the stick a few times,



## 8. Game

You are the pilot of a brand new Spad XIII, assigned to the 94th Squadron of the Air Service of the American Expeditionary Forces. Your airfield, located on the eastern outskirts of Paris, is a small strip of land with one hangar. It is the morning of a day in late Spring, 1918. The weather promises to be fine, but there is a high mist at 1000 feet. Already there are scattered cumulus at 3500 feet. The wind is from the west at 10 knots.

The plane is fully fueled and ready to go, carrying 5 bombs and 1000 rounds of ammunition for your machine guns (enough for 100 bursts). You plane is pointed north, the correct direction for take-off.

### a) Enemies

The front lines of World War I are just 20 kilometers to the east. German two-seater observation planes (mostly Albatross CX's) can be anywhere in the combat zone (See Figure 3) These planes are slightly slower than the Spad, but their machine guns, though not as accurate as yours, can shoot in any direction. In addition, above the enemy lines there are 10 enemy observation balloons defended by flak batteries on the ground. Behind the German lines is a German airfield. It is recognizable by its two hangars and a plane on the ground. It too is protected by flak.

1) The two-seaters will, when attacked, either perform defensive circling maneuvers or try to get away. The circles can be large or small, and the smaller the circle, the harder it will be to get on the plane's tail. It may change the direction of its circle at any time. Since your aim is much more accurate than the Germans, it is best to shoot it at the greatest distance possible. You can't hit it, however, unless the plane is at least as big as your crosshairs. Try to get on the tail, if possible, as this will keep your motion small relative to the other plane, and you can fire at leisure. Rudders can be used for fine-tuning your position. When shooting at the side of the plane, if the plane is relatively large, you must aim at the engine to score a hit.

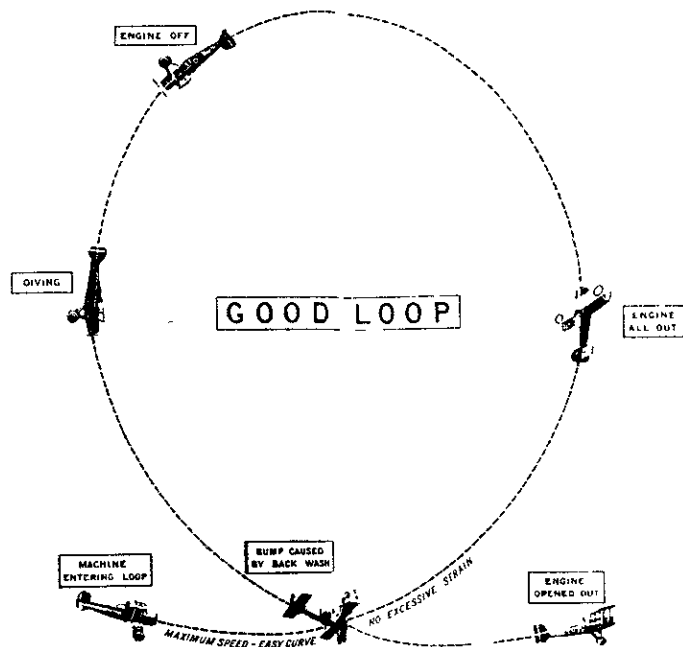
The chase can be a challenge. Remember, if the plane is above the horizon, that means he is at a greater altitude than you; and if he's below you, the plane will be below the horizon line. Determine the course the other plane is travelling, and aim ahead of him to cut him off. Attacking from below is uncertain, because of the possibility of stalling. The best way to turn sharply while tracking the plane is to do an Immelmann turn or a Split-S.

2) The observation balloons do not move. There are ten of them, between 500 and 1500 feet up, forming a straight line just behind the German trenches. If you go due east from your airfield, they will be there. Each one is protected by a flak battery, which hurls explosive projectiles into your path. The flak will appear as orange bursts moving past your plane when you are about a mile away from them. The flak is **dangerous!** Evasive maneuvers do not help when under flak attack, in fact they slow you down and make you more vulnerable.

The balloons are best attacked by finding the last one in the row and approaching it from the end. If you are adjacent to two balloons you will be flanked by them both, thus reducing your chances of survival. The less time you spend in the vicinity of the balloon, the less danger. Never attack a balloon with your nose up - try to increase your speed by lowering your throttle and attacking in a dive.

3) The enemy airfield, located due east and behind the line of balloons, is also protected by flak. Your principal mission, beyond destroying enemy planes, is to bomb the two hangars there. Dropping a bomb so that it hits a specific target is a fine art, and must be practiced. It's easiest to bomb at less than 500 feet, looking down with the **6** key. The bomb doesn't travel horizontally as much, the target is larger, and, since you can only drop one bomb at a time, you can drop another one sooner. Your altitude must be less than 1000 feet to see the explosion. It is possible to dive bomb, which again exposes you less to flak, but this takes long practice.

Occasionally, the hangars have been struck before you arrive there, by members of your own squadron. If so, they will already be on fire and you will be credited for destroying one of them. You receive no credit for shooting at the Fokker plane parked there.



## b) Damage

Either the flak or the machine guns of the observation planes can damage the Spad. The damage can be light and affect the flight little, or be catastrophic. In most cases the only clue to the amount of damage your plane has suffered will be in how it flies. The least severe damage to the Spad will be destruction of the rudder control. This will simply mean that you can't use the rudder; however, the ailerons alone can manage any of the maneuvers you wish to make. The next level of damage is destruction of the elevator. You can still get home, since you can control your height with the throttle, but complicated maneuvers are difficult or impossible. If your engine is hit, it will sputter and lose power. Pressing the **9** key (top throttle) will goose the engine into giving a burst of power for a short time, but this must be done continuously to see any real effect. The Spad was not made to glide, but to escape capture you should try to make it back over the French lines. The worst damage you can suffer is to the ailerons. When the control line is severed, the ailerons will fall into a hard left bank. This is almost uncontrollable, although pressing the extreme right key (**F**) and pulling the stick back and to the right (**C**) can keep you level. The right rudder (**.**) helps also, as does powering down. Only the experienced pilot will be able to land with this handicap.

When more than one of these damages occur, it is very unlikely that the plane can safely land.

## c) Repairs

Landing near your hanger refuels and rearms your Spad, repairs damage you may have sustained, and lets the Germans repair their hangers if you have bombed them. This means that you have 0 altitude and 0 airspeed. If you are not close enough to your hanger you can taxi over to it. Your plane will reappear, pointing north, and ready to take off.

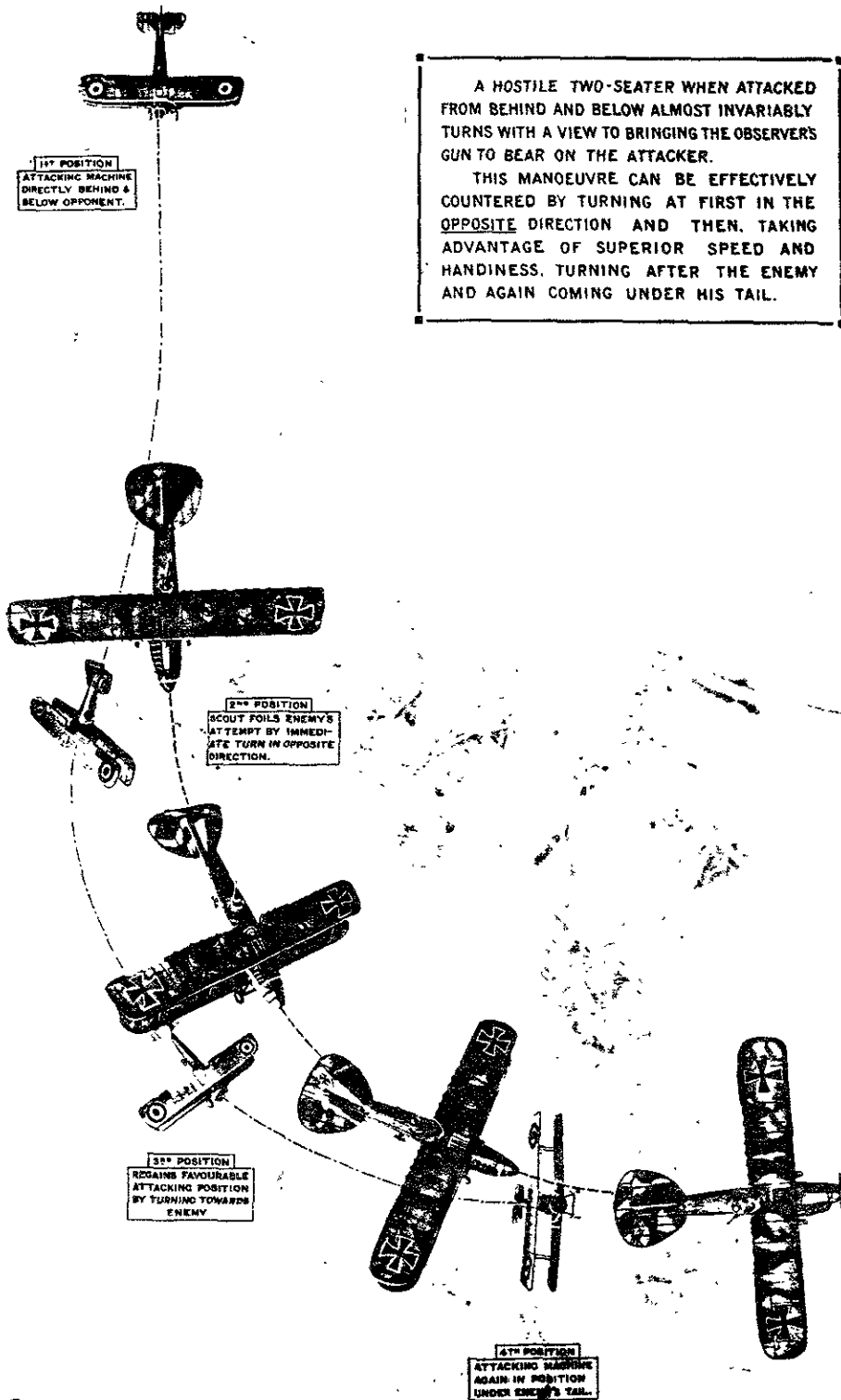
## d) End of Game

To end the game successfully you must 1) land undamaged anywhere and press the **K** key, 2) land damaged on French territory, or 3) land damaged on German territory and escape capture.

To end the game unsuccessfully, 1) crash, or, 2) land damaged on German territory and be captured. The screen will go blank except for **PRESS ENTER**, or possibly **CAPTURED**.

You only see the Final Score screen if you end the game successfully. At this time the number of enemy planes, observation balloons, and enemy hangars you have destroyed will be tallied. Only planes count when the awarding of Ace status is done, and you must have downed at least five of them to qualify.

To begin again, press **S**; to end the session, press **E**.



A HOSTILE TWO-SEATER WHEN ATTACKED FROM BEHIND AND BELOW ALMOST INVARIABLY TURNS WITH A VIEW TO BRINGING THE OBSERVERS GUN TO BEAR ON THE ATTACKER.

THIS MANOEUVRE CAN BE EFFECTIVELY COUNTERED BY TURNING AT FIRST IN THE OPPOSITE DIRECTION AND THEN, TAKING ADVANTAGE OF SUPERIOR SPEED AND HANDINESS, TURNING AFTER THE ENEMY AND AGAIN COMING UNDER HIS TAIL.

## 9. Scenarios

The following scenarios are in addition to your basic mission of destroying enemy planes, observation balloons, and enemy hangars.

### a) Assigantion in Paris

You met an attractive Parisian at a party the weekend before. After a wild night, you promised this person that you would fly by the Eiffel Tower today *and wave*. Take off and fly due west for about six minutes, until you see the Seine, and then turn south. The tower should be visible shortly. Make a tight circle around the monument at about 500 feet, looking out the right side window. After two revolutions, head back for your airfield as quickly as possible so that you won't be missed.

### b) Observation

Because of damage sustained by the Observation Group, you have been assigned to do a reconnaissance of the trench positions along the front lines. Head north until you see a French village, then east until you are over the trenches. Turn parallel to the trenches. Using pen and paper, sketch the positions of the trenches until you see the destroyed village in no-man's-land. You can avoid or attack the observation balloons as you see fit. Return to your airfield and land.

### c) Breaking In a New Spad

To get a feel for the new Spad, do a series of acrobatic maneuvers. First climb to 3000 feet. Do an Immelmann turn followed immediately by a Split-S. Do ten loops without stopping. Do a Barrel Roll. Stall and recover at least twice.

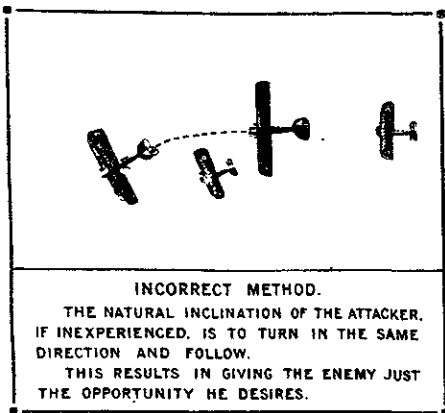
### d) Rescue at Mareuil

You have received word that there is a spy who has an urgent message for your commander. He is stuck in Mareuil, behind German lines. Take off, and, being careful to conserve fuel, head northeast towards the Destroyed Village. Use the map to find the village as best you can. It may not be easy. Once you have located Mareuil, land on the main street. Take off again and return to your home airfield with the information.

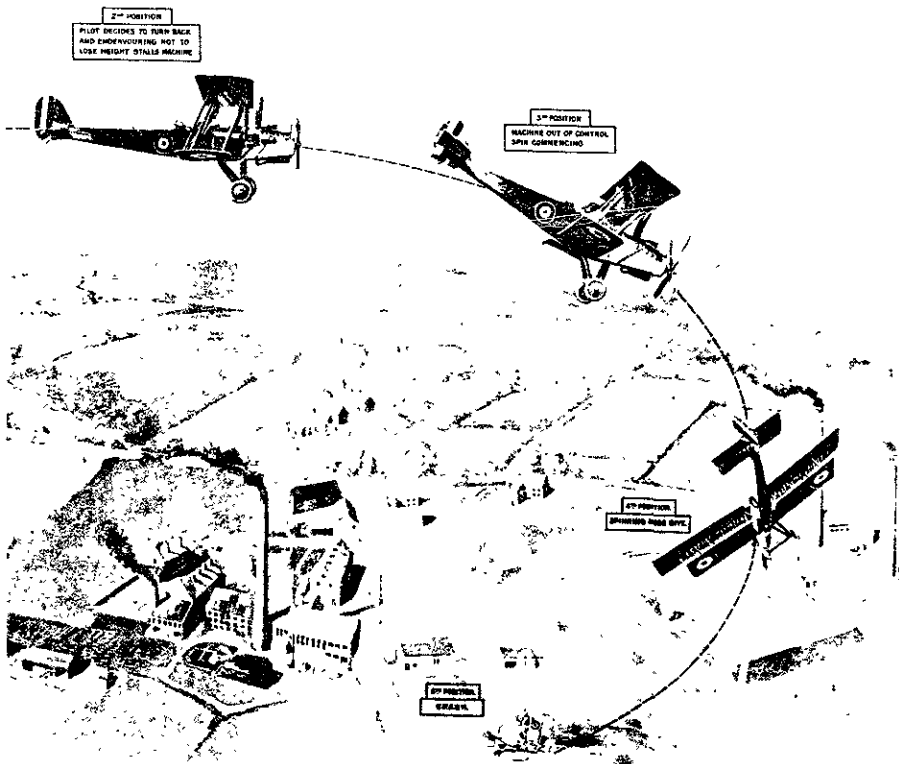
### e) Big Adventure

You have been assigned to destroy the gun emplacements in the hills south of the Marne. The hills are due east, beyond the German airfield. As you fly over the front, strafe the eastern trenches with gunfire from an altitude of 300 feet. Continue east, and, when you reach them, bomb the German hangars. When you reach the hills, make several low flights over them, shooting all the while. Drop all your bombs as close to the center of the smallest hill as possible. If you want to take out a few observation balloons on the way home, do so, but be careful that you don't run out of fuel.





**IN CASE OF ENGINE FAILURE  
 DON'T TURN BACK - PUT HER NOSE  
 DOWN AT ONCE AND MAKE SOME  
 SORT OF A LANDING AHEAD**



## Quick Reference Guide

Note that the key sequences required to access special functions depend on the type of computer console you have. Important keystroke sequences are summarized here for your "quick reference."

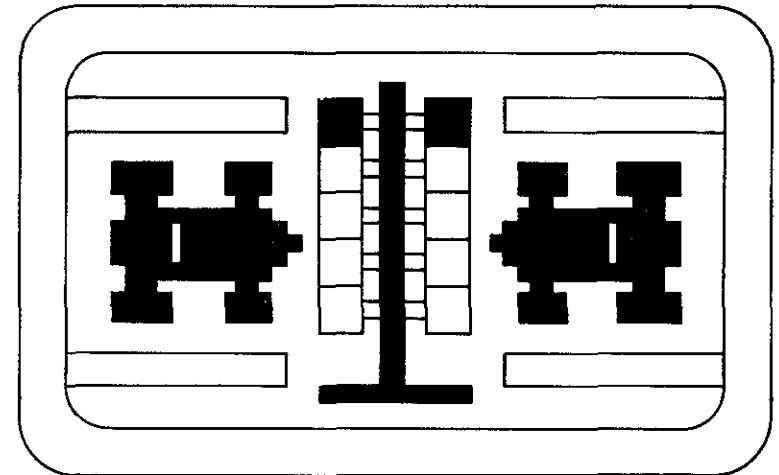
<u>TI-99/4</u>	<u>TI-99/4A</u>	
↑ (E), ← (S), → (D), ↓ (X)	↑ (E), ← (S), → (D), ↓ (X)	Moves the player's car around the track.
Y or ENTER	Y or .	Accelerates the player's car.
SHIFT Z (BACK)	FCTN 9 (BACK)	Returns to the options display.
SHIFT R (REDO)	FCTN 8 (REDO)	Starts a new game with the same options as in the previous game.
SHIFT Q (QUIT)	FCTN = (QUIT)	Returns the computer to the master title screen.

Note: If the optional Wired Remote Controllers are used, move the lever to control player's car, and press the FIRE button to accelerate.



TEXAS INSTRUMENTS  
HOME COMPUTER

## Car Wars



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.

*Programmer:* James E. Dramis

*Book developed and written by:* Staff members of the Texas Instruments Education and Communications Center

Copyright © 1981, Texas Instruments Incorporated  
Command Module program and data base contents  
copyright © 1981, Texas Instruments Incorporated.  
See important warranty information at back of book.

## INTRODUCTION

If you enjoy the excitement of high-speed racing, combined with the challenge of out-maneuvering a canny opponent, this is your kind of game! With the Car Wars *Solid State Software*™ Command Module, you pit your speed and skill against the computer's as you try to get your car around the track without getting "crashed" off the field.

With the Car Wars module, you try to:

- Score points by clearing as many dots as possible from the lanes.
- Avoid the computer's yellow car.
- Obtain extra cars by clearing all of the driving lanes on the display.

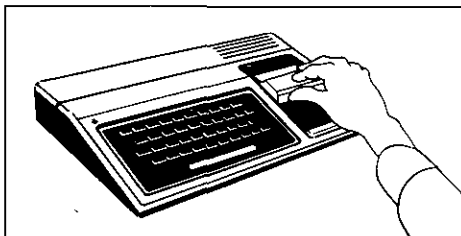
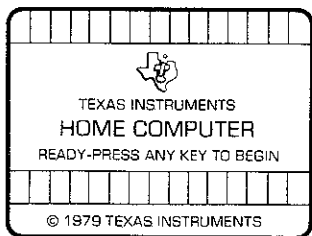
In addition, variable levels of difficulty, under your control, allow you to add even more excitement to the action as your skills increase!

Movement on the screen can be controlled by the Wired Remote Controllers or from the keyboard.

## USING THE SOLID STATE SOFTWARE™ COMMAND MODULE

An automatic reset feature is built into the computer. When a module is plugged into the console, the computer returns to the master title screen. All data and program material you have entered will be erased.

*Note:* Be sure the module is free of static electricity before inserting it into the computer (see page 7).



1. Turn the computer ON and wait for the master title screen to appear. Then slide the module into the slot on the console.
2. Press any key to make the master selection list appear. To select the module, press the key corresponding to the number beside CARWARS.



*Note:* To remove the module, first return the computer to the master title screen by pressing **QUIT**. Then remove the module from the slot. If you have any problem inserting the module, or if it is accidentally removed from the slot while in use please see "In Case of Difficulty" on page 7.

## GETTING STARTED

After you select the module, a demonstration of Car Wars begins. To stop the demonstration, simply press any key and the option selection list appears; or you can wait for the sample game to end and the selection list to appear automatically.

To set up your own game, you need to choose the speed of both cars and to select the point in the game when the computer's car will increase its speed.

### Player/Computer Car Speed

You can choose from three speed options which affect both your car and the computer's.

- *Creepin'*—Cars move slowly.
- *Fast*—Cars move faster.
- *Flyin'*—Cars move fastest.

Press **1**, **2**, or **3** to select the speed of the cars.

### Computer Car Speed Up

During the game, the computer's car automatically doubles its speed. After you select the starting speed of both cars, you choose the point in the game when the computer's car speeds up. You have three options:

- *Late*—The computer's car speeds up after you clear 150 dots from the playing field.
- *Early*—The computer's car speeds up after you clear 120 dots from the playing field.
- *Look-out!*—The computer's car speeds up after you clear 90 dots from the playing field.

Press **1**, **2**, or **3** to select when you want the computer's car to speed up. Note that at any time during the game selection process, you can return to the first option selection group (Player/Computer Car Speed) by pressing **BACK**.

### PLAYING THE GAME

After you select the game options, the playing field appears, consisting of dots and solid lines representing car lanes.

A red car and a yellow car appear in their starting positions at the bottom of the display. You control the red car; the yellow car is controlled by the computer. Two additional player cars appear in the "pit" in the center of the display.

To the left of the playing field is a "traffic light" which signals the start of each game. The current score and the best score in the present series of games are displayed just above the traffic signal.

You can stop a game at any time and return to the option selection display by pressing **BACK**. To start a game over with the same options, press **REDO**.

### Object of the Game

The object of the game is to clear the dots from the playing field by successfully maneuvering your car through the maze of lanes, without being "crashed" by the yellow computer car. You get three chances to clear the field. The number of cars in the pit show how many chances you have left at any point in the game.

To start the game, press any key. The game begins when the traffic light at the left-hand side of the display turns green to signal "Go!" Then the two cars begin moving in opposite directions around the outside driving lane.

To maneuver your car around the field to avoid the computer's car, press the arrow keys, ↑(E), ←(S), →(D), and ↓(X). To move your car *two* lanes over, instead of one, simply hold the key down for a moment. (This capability provides a strategic player-advantage because the computer's car can move only one lane at a time.)

As the game begins, the two cars are traveling at the same speed. The yellow car automatically doubles its speed sometime during the game, depending on the "speed up" level you selected. (See "Getting Started.") To accelerate your car, press Y. (Note that you can also accelerate by pressing **ENTER** on the TI-99/4 console or the period key on the TI-99/4A console.)

If you are using the Wired Remote Controllers, move the lever to direct your car, and press the **FIRE** button to accelerate.



### Scoring

As you move your car around the field, your object is to clear as many lanes of dots as you can before the computer's car can crash into yours. For each dot cleared in the first round, you receive 10 points. If you successfully clear all the dots without being "crashed," a **BONUS** message flashes on the display, and bonus points are added to your score. The number of bonus points awarded depends on the type of game you set up, as shown on the chart below.

SELECTION/ POINTS	CREEPIN'	FAST	FLYIN'
LATE	200	400	600
EARLY	400	600	800
LOOK-OUT!	600	800	1000

Thus, you could receive from 200 bonus points, for a game where you've chosen a car speed of "creepin'" and a computer-car speed-up point of "late," to as much as 1,000 points, if you select a car speed of "flyin'" and a speed-up point of "look-out!" When the bonus scoring is completed, an extra player car is added to the pit. (You may receive up to four additional cars.)

To begin a second round, press any key. The yellow computer car appears in a new starting position. Scoring, bonus points, and additional cars are awarded exactly as in the first round.

If you again succeed in clearing all the dots from the field without being crashed, the *third* round begins with *two* computer cars simultaneously attempting to crash your car off the field.

At the two-computer car level, each dot is worth 20 points; and when a bonus is received, double bonus points are awarded.

Should you successfully complete two rounds at this two-computer-car level by clearing all the dots, you can then move on to the *three-car* level, playing three computer cars simultaneously. At the three-computer-car level, each dot is worth 30 points, and triple bonus points are awarded. The game continues in this way with an additional computer car appearing and more points being awarded after every two rounds.

### END OF THE GAME

The game is over when the computer car crashes all the player cars off the field. The computer flashes your highest score for this session with the module on the display.

To play another game with the same options, press **REDO**. To change the options for the next game, press **BACK** and the option selection display appears. When you finish playing Car Wars, press **QUIT** to return to the master title screen.



### 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 Command Module can be damaged by static electricity.

Static electricity build-ups are more likely to occur when the natural humidity of the air is low (during winter or in areas with dry climates). To avoid damaging the module, just touch any metal object (a doorknob, a desk lamp, etc.) before handling the module.

If static electricity is a problem where you live, you may want to buy 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 **QUIT**. Withdraw the module, align it with the module opening, and reinsert it carefully. Then press any key to make the module title screen appear. (*Note:* In some 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, and wait a few seconds. Then, reinsert the module, and turn it on again.

If you have any difficulty with your computer or the CAR WARS 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*.