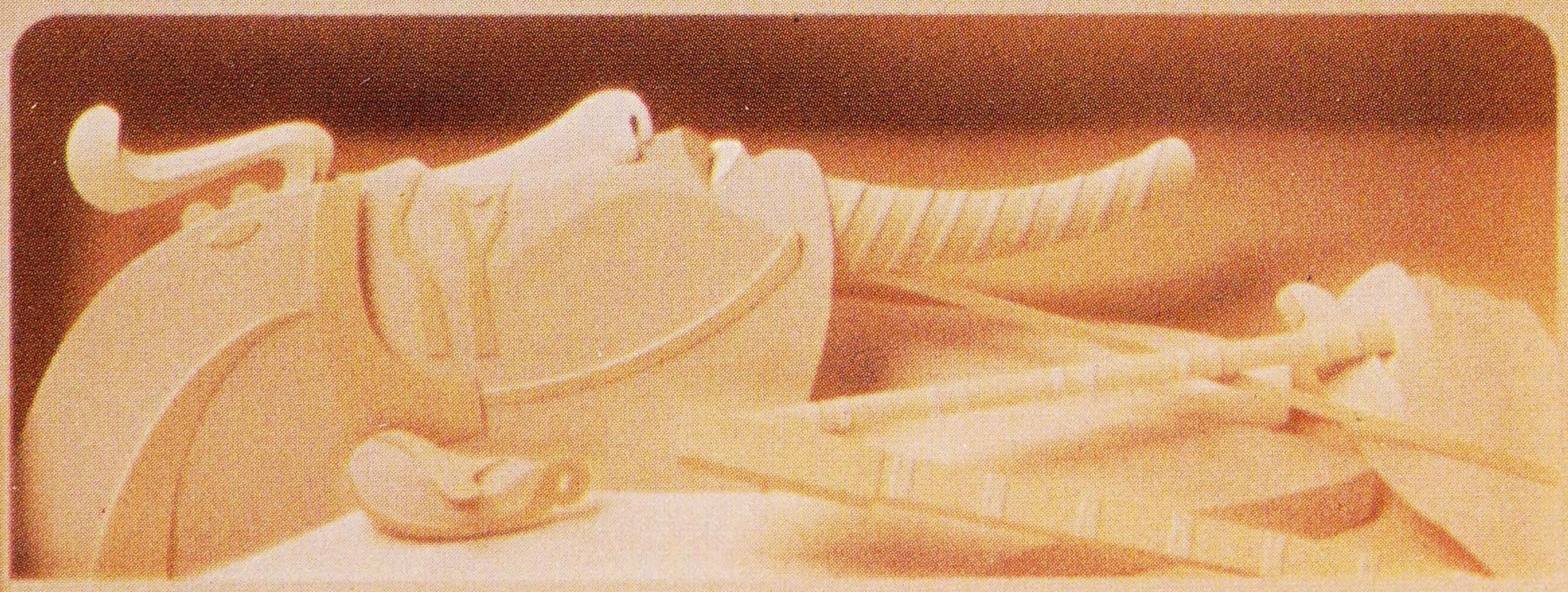
The Official Guide To Sid Meier's CIVILIZATION™

Keith Ferrell



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Keith Ferrell

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To Ed Ferrell and Gregg Keizer—
Heat up the chili!
Break out the board!
Let the games begin!

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Acknowledgments

There's no way to cover all of the options and opportunities offered by a game such as *Sid Meier's Civilization* in even a sizable book. What I've tried to do here is to give you the benefit of my own experiences with the game, bearing in mind that your experiences will be different, and that, indeed, everyone will approach the game with her or his own set of biases and preferences, which will, in turn, shape the game at hand.

This flexibility is, above all, a tribute to Sid Meier, Bruce Shelley, and the entire design and production team at MicroProse. I know of no other game so open-ended yet so filled with ideas and excitements as this one. That's a neat accomplishment, and one worthy of much commercial success and critical acclaim.

Sid and Bruce both made generous helpings of their time available to me at a very early stage in the development of the game and of this book. Their hospitality and insights helped shape the book's direction, and helped me as well get a handle on how to write about a game that's different every time you play it. My goal, more than anything else, was to write a book that would open the player's eyes to the many different opportunities this fine game offers.

Kathy Gilmore at MicroProse proved over and over again why she is so often mentioned as the best in the press relations business. Her concerns that I have all the resources needed to do

the book, her constant accessibility, her own generosity of time and involvement all helped make this a better book.

Stephen Levy demonstrated daily—sometimes hourly—why patience is key among a publisher's virtues, especially during a difficult and more often than not hectic period of composition. Pam Plaut, the book's editor, is a writer's dream and may be even more patient than Stephen.

All of the fine staff at OMNI helped with insights and advice, particularly Sandy Fritz, who provided some excellent research materials at just the right moment, and Murray Cox, who may have heard more about this book than he cared to.

At home, Martha and Alec Ferrell were as always terrific to be around during the writing of a book. They're pretty nice to be around at other times, too.

And above all, the two to whom the book is dedicated. My brother Ed Ferrell, and our spiritual brother Gregg Keizer, both contributed mightily to my understanding of game design, civilizational dynamics, and the intellectual bases this game rests upon. Thanks guys, let's do it again sometime (without the book.)

INTRODUCTION

A GAME AS BIG AS HISTORY

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A GAME AS BIG AS HISTORY

The impulse to cultivate the land, domesticate wildlife, settle in one location and from that location send out explorers, envoys, warriors, traders, and colonists—the urge, in other words, to civilize—is an impulse less than 10,000 years old.

That's not much time. Our earliest primate ancestors appeared on the scene about 18 million years ago, with the first members of the genus *Homo* arriving 16 million years or so later. *Homo sapiens sapiens,* our species, is barely 100,000 years old. Civilized humanity is, so to speak, a most modern invention.

Yet that handful of civilized millennia encompasses a climb from cowering in darkness to reaching for the stars. While civilizations have risen and fallen over the past 8,000 years, the impulse to civilize—to develop natural and human resources for the betterment of the population—has remained, for the most part, constant.

Sid Meier's Civilization gives you the opportunity to create, rule, and manage a civilization. (Ruling and managing are, players quickly discover, quite different things.) As the game begins, you control a single band of settlers with little or no technology; to win the game, yours must be the first civilization to colonize a planet in another stellar system. This game has *range*.

O Introduction

Civilization may, in fact, be the most open-ended and flexible computer game ever developed. Each step along the pathway to a fully functioning, happy and healthy, well-managed civilization can lead in several directions. Decisions made early in the game can generate consequences that stretch across centuries. There is no right or wrong way to play the game.

Paradoxically, the degree of freedom allowed by the game imposes a greater responsibility on the player than is true of most games. There's more at stake here, or at least there seems to be. Sid Meier has done a wonderful job of creating the illusion of genuine consequence within what is, after all, an interactive electronic entertainment.

Don't get me wrong: You can have quite a good time playing *Civilization* quickly, taking a "smash-and-grab" approach. Devote your entire attention and productive ability to cranking out military units, seeking enemies, making war. Such an approach, though, may be foredoomed. Your opponents are likely to be craftier, more intelligent (in the context of the game, at least), and more organized than you. Their own attention to economic and cultural development may ultimately provide them with more effective weapons of war than your own approach. (Bear in mind, too, that even a "quick" game can take several hours to complete ... unless your civilization is rapidly overrun by other, more vibrant cultures.)

Conquest and warfare certainly play a major part in *Sid Meier's Civilization:* This is a terrific wargame. Yet it is more than that, just as even the most warlike of real civilizations are always more than just military machines. Culture and government, religion and commerce demand the same degree of attention as production of weapons and military units; they may well prove more valuable to the ultimate destiny of your civilization.

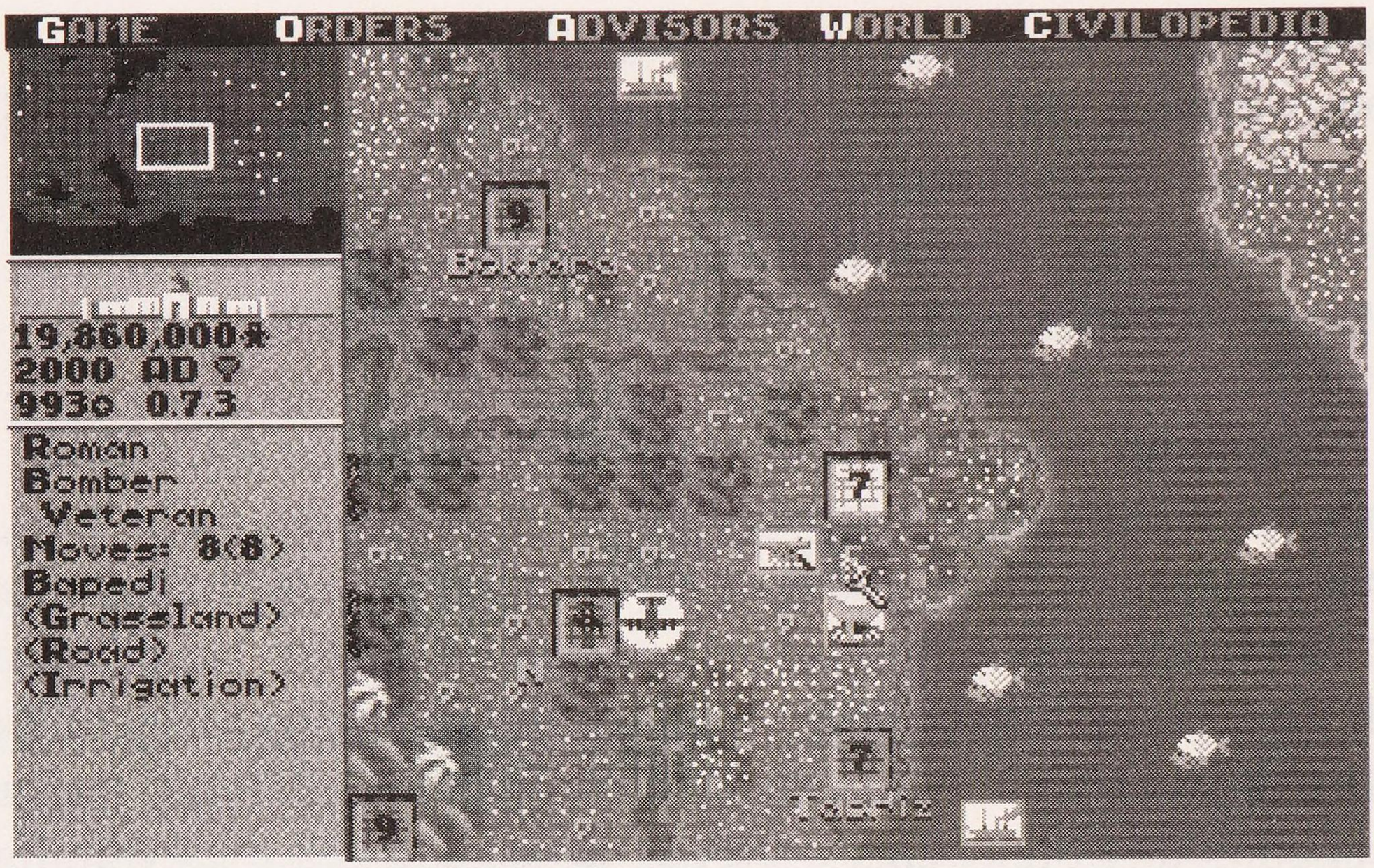
Meier's accomplishment here is, ultimately, the development of a game whose peaceful developmental aspects can be as or even more fulfilling than its warlike aspects. How many wargames can

you think of in which you have the choice between producing either weapons of mass destruction or Shakespeare's Theater? That the option is present is an indication of Meier's growth as a designer; that plowshares can in some ways be as fundamental to success as swords is an indication of the sophistication of the game.

There is a science fictional aspect to *Sid Meier's Civilization*—or perhaps a more appropriate comparison would be to a fantasy scenario. The game does not promise to duplicate civilization as our species' history knows it. Rather, players are provided with the tools of civilization and given the chance to make of those tools what they will. While all players—one human (you) and up to six computer opponents—start at the same level, the evolution and development of individual civilizations does not follow parallel tracks any more than it did in our own history. Forms of government, ideologies, and technologies can collide. I have played games wherein I constructed lovely civilizations at a roughly medieval level of technology, only to be invaded and conquered by opponents in tanks and aircraft.

Likewise, I have found myself in control of modern technologies that provided the means for laying siege to the entire world. The clash of cultures that dramatizes so much of human history is made vivid in the confines of Sid Meier's game. That the clash can produce tragic results is inherent in some of the game's messages: *Egyptian civilization destroyed*, for example, carries a measure of poignance, even if it fell at your hands.

O Introduction



It is not unusual for technologies of several eras to coexist in the same civilization.

As destroyer or destroyed, you will find yourself facing incongruous but convincing confrontations. Placing chariots and catapults in the path of armored personnel carriers without the confrontation seeming forced or false, in the manner of a wargame construction kit, is a tribute to the game's persuasive abilities. You will find yourself not only suspending your disbelief, but also caring for the societies you create.

Through it all, the player is reminded of the management aspects a civilization demands. Infrastructure is crucial. Your people must be housed, fed, and cared for, or they will let you know of their displeasure. The infrastructure must be maintained and upgraded. Simple roads can become highways or rail lines. Primitive sailing craft able only to hug the shore give way to huge oceangoing transports, battleships, carriers, and subs. There are libraries and universities here, as well as barracks and depots. Ideas are as crucial as ordnance to the growth and expansion of your civilization.

Best of all, there's a sense throughout of the interrelationship among ideas, of the continuity of cultural evolution. Decisions made early in the game echo throughout its progress, both to your

advantage and against it. Each path you choose both opens and closes other opportunities. You learn quickly to choose carefully.

There is also a sense in which this game can be viewed as a sort of living, interactive history book, with the understanding that the history is being made up as you go. You will quickly discern the relationships among ideas: which discoveries lay the foundations for subsequent leaps, and which can lead you into fascinating but not necessarily profitable directions. The intellectual underpinnings of *Sid Meier's Civilization* are compulsively interesting.

Meier is aware as well that civilizations play out their lives on planetary surfaces, often despoiling them in the process. You are charged in this game not only with exploiting the world's natural resources, but also with renewing and restoring them. Fail to do so—or permit your adversaries to go too far in despoiling the natural world—and you face global disaster. Again, you are provided with both the information and the tools necessary to accomplish the task of fending off cataclysm.

Extending the thought experiment another step, Meier provides an option that lets you alter the climate of your world before you begin. If you've wondered how civilizations might differ on a wetter or dryer world than our own, here's your chance to find out.

Our own world is here as well. While most of the games you play will take place on randomly generated worldmaps, Meier has included a map of earth and given you the chance to launch your civilization from its actual, historical starting place. Do you have what it takes to lead the Egyptians to the stars?

There's even an interactive encyclopedia of sorts, with entries specific to the game. Design and aesthetic decisions are well supported by information resources, both within the game and in Bruce Shelley's elegantly written documentation. You have at hand the materials you need to make informed decisions.

Will they be the right decisions? There's no clear answer to that question. Sid Meier is as aware of the dilemma of design bias as any designer I know. It's not by accident—nor solely by marketing intent, I think—the game is called *Sid Meier's Civilization.*

Insofar as is possible, Meier has minimized his overt presence in the game: You don't have to "think like Sid" in order to prosper. What he has done is to create a sort of electronic pocket universe with clearly defined rules and proscriptions. Within those limits, you are on your own, able to find your way according to your own inclinations and abilities.

Those inclinations and abilities may evolve as your relationship with the game grows deeper. While the game is primarily intended as an entertainment, it has an educational aspect that cannot be overlooked. Meier is not teaching here, nor—except in a couple of environmental areas—is he preaching. Rather, he is providing players with a self-contained continuum to explore, and letting the reasonable and realistic rules of that continuum do the teaching. You learn by experience what works and what doesn't. If the lessons learned are not directly applicable to the real history of our planet, it's not going too far to say that they may deepen your appreciation of the intricacies of history, and the odds against which civilizations have always struggled.

Sid Meier's Civilization is a bold stroke from one of the boldest of our interactive game designers. This is one game that challenges your worthiness, your intellect as well as your instincts, that provides interplay of ideas as well as fun. In short, a most civilized entertainment.

Chapter 1

Caveat ...

Chapter 1

Caveat ...

Sid Meier's Civilization is the end result of thousands of hours of thought, creativity, and plain hard work on the part of designers Sid Meier and Bruce Shelley, as well as the rest of the team at MicroProse. They have put their best efforts into this game, producing a genuinely original product, one that should provide literally hundreds of hours of entertainment and edification.

Their creativity is also part of a business—quite a successful one, in fact. Sid and Bruce, and the rest of the MicroProse team depend on revenues from their games in order to pay their salaries. There's a bargain inherent here, a two-way street. You pay before you play.

You owe it to them, in other words, to use only legitimate copies of the game, and to acquire those copies the old-fashioned way: by purchasing them. (Or by being given the game by someone who has purchased it.)

That's not a lot to ask when you consider the vast riches and challenges embedded in *Civilization*. You're a rare player if you can master the game in a single sitting; and even quick games can take ten or more hours to play. In other words, this game rapidly amortizes its cost out to a few dollars a session. And, if you're like most *Civilization* fans, that few dollars will evolve into a few cents per session simply because you're playing the game so often.

To that end, be aware that this book is no substitute for the game manual. While I think there's a lot in my book that's not in the manual, there's also a lot in the manual that's not here. Specifically, I have not included keyboard instructions or other specific details of game operation that properly belong in the game's documentation. My aim here is to help you get more out of the game, not to help you get around purchasing it.

Software piracy is a serious issue that grows more serious every day. The interactivity that entertainment software invites is also an invitation to participate in repaying the creators of your favorite programs. That participation—in the form of payment for products—is crucial if the entertainment software industry is to continue to grow and evolve, producing ever more challenging and delightful games and programs.

So play it straight. Pay before you play.

If you are playing a legitimate edition of *Sid Meier's Civilization,* I hope you find my book helpful, even rewarding. May your civilizations flower and spread out among the stars.

And if you're playing a pirate copy, I hope your civilizations all collapse in ruins and your citizens flay you in the electronic streets.

Chapter 2

A Civilized Frame of Mind

Chapter 2

A Civilized Frame of Mind

This is a thinking person's game. Better than any piece of interactive electronic entertainment I know, *Civilization* draws upon a variety of your internal resources. While the game is fun, it can also be educational. Understanding always that *Civilization* is a game and not an event-for-event simulation of human history, you can nonetheless derive from playing it a sense of the sweep and accomplishment of human civilizations over the millennia. That perspective can also help you excel at the game.

It will help to develop the long view. Think in terms of consequences over decades, if not centuries, and you'll stand a better chance of mastering the intricacies of *Sid Meier's Civilization*.

Certain skills will serve you better than others. A constantly aggressive and expansionist playing style may work against you over the long run. Likewise, too relaxed an approach, too great a willingness to strike every treaty that comes along, may hamper your ability to grow. As the ruler of your electronic civilization, you must seek equilibrium among a variety of related but in some ways disparate playing skills.

A Sense of Perspective

Key among these skills is the balanced sense of perspective possessed by good managers. Very quickly in *Civilization,* you'll find yourself juggling a large number of conflicting if not contradictory demands, challenges, and opportunities. There is no one correct way to organize your response to these aspects of the game. But there are tools—thought tools, ways of thinking—that can help ensure that your decisions serve your ultimate goals.

Information is the foremost resource of the successful civilization. Information in the game takes two forms: that which you generate from the skills, civilization advances, institutions, and investments of your own society, and that information you obtain from other civilizations. The infrastructure of your civilization is important, but it can be argued that in this game, it's *info*-structure that marks the difference between success and failure. Manage your information wisely and you will have taken a large step toward making the right decisions when crunches come.

The long time-frame perspective and its relationship to information come together in one of *Civilization*'s most interesting aspects: negotiation with other civilizations. You can strike treaties, exchange knowledge, form alliances. There is a temptation, bred perhaps from an entire generation of wargames pure and simple, or perhaps from our own human nature, to build an aggressive, militaristic civilization, letting little or nothing stand in the way of your expansion. This ruthless approach can work, and work spectacularly well. Indeed, this is the approach to take if you're looking for a quick, total victory.

But the odds are strong that *Civilization* won't yield a quick conquest of the world. You're going to have to share your planet with other groups, some belligerent, some peaceful. Knowing which is which and striking the best possible balance of aggression and conciliation will help you keep your civilization strong.

A Little Knowledge

Civilization is also unusual in its approach to the relationships among bodies of knowledge. Ideas build upon each other. Your scientists and wise people can see further because they stand upon the shoulders of those who came before them. As you are prompted from time to time to designate a particular course of academic research, put yourself in that long-view mode.

The knowledge that seems best to serve your immediate temporal needs may not help you so much a generation or two down the line.

You must feed, house, and care for those generations as they multiply. Here, the skills of the city planner and resource manager come into play. You may find yourself torn between expanding your empire and solidifying your control at home. Opt for home: Over the long run you will be rewarded.

Your citizens do have it in their power to reward you, but they also have it in their power to slap your wrists—or worse!—for bad management. The rewards take several forms, including noticeable increases in productivity.

Citizen dissatisfaction assumes several guises as well. You will find yourself losing productive capacity, even population, if you don't see that the basic needs of your citizens are met. Nor will harsh despotic rule always serve you well, although it is an option. There are *ideas* at work in this game, among them a fairly sophisticated notion of government and the advantages and disadvantages of its various historical and contemporary forms. If you can possibly manage to do so, give your citizens every freedom available. Your task will not necessarily be made easier by the democratic approach, but the core of your society may be healthier.

Domestic Tranquility

That internal health needs to be stressed. This is another way of advising you not to keep your eyes too constantly on the frontier, tempting though that frontier might be. You cannot successfully wage worldwide war—or even global commerce—if there's rot and decay at home. Upgrade your citizens' cities at every affordable opportunity.

Bear in mind as well that your people do not live by food and toil alone. Even the citizenry of a despot requires *some* luxuries: These are the leavening that can help hold your despotism together.

As you progress through the game you'll find that your decisions grow more complex and challenging. Here, you'll need something of the talent of a seer, albeit a well-informed seer. As your world approaches the modern age—as measured by technological ability, not just the calendar date—you must shift your eyes from the planet at hand to worlds beyond your own. Because the ultimate goal of *Civilization* is to expand beyond your own planet and onto others, there is a point in the game where rapid scientific progress—the marvels of the Information Age—becomes vital to victory. Prepare your society for the Space Age by laying a solid groundwork of scientific accomplishment.

Prepare as well for laying siege and living under besiegement. The end game in *Civilization* can be won—or lost—in a number of ways. You will reach a point at which either the world lies at your feet, or you find yourself striking alliances and fending off invasions in order to hold onto your empire. Times of expansion end; times of consolidation and control can win the game for you. This is especially true in the end game, the final 200 years or so, during which someone will first reach the stars.

A Game That Holds Wonders

That's the end game. The journey there can be as rewarding as the resolution. This brief introduction—an entire book, for that matter—can barely do justice to the richness of detail and decision that lie in this game, and which you will encounter on your way to the creation of a functioning civilization.

Along the way, for example, you will have the chance to create wonders, different ones for different ages. The creation of a Wonder of the World is an undertaking that virtually defines the long view. Think of the Wonders as investments in the future of your civilization. Dedicating a single city to single creation for dozens of turns, perhaps more than a hundred turns, is a step not easily taken; yet build the right Wonder or Wonders, and you can reap benefits for millennia.

Millennial reach, the huge sweep of history, is probably the great accomplishment of this game, and the aspect which will linger longest in your memory. By applying that memory to the game—by taking lessons learned from the real past of our species' history, and the electronic past acquired through playing *Sid Meier's Civilization*—you will discover the benefits of approaching your computer in the right, long-range frame of mind.

Chapter 3

A Walk Through Sid Meier's Civilization

Chapter 3

A Walk Through Sid Meier's Civilization

It's you against the world.

That world consists of the natural world itself, its lands and oceans, your computer opponents, and, in a sense, your own people. These are the operative elements of *Sid Meier's Civilization,* the elements with which you will interact. It's up to you to manage, lead, negotiate, direct, inspire, and coordinate your particular civilization's response to these elements. As the central character in *Sid Meier's Civilization,* you assume the roles of ruler, general, industrial leader, political strategist, cultural arbiter, and more. Because of the game's all-but-unique flexibility—it's a rare situation where you don't have several choices to make, some of them of great and long-lasting consequence—no two games will be alike.

For that reason, the more familiar you become with the game, its resources and manual, as well as this book, the better prepared you will be to make the right decisions as they arise.

In this chapter, we'll walk through the main features and resources of this exceptionally rich game, as well as look at its interface and command structure.

The Worlds Themselves

The worlds in *Sid Meier's Civilization* are generated randomly, ensuring that each world differs from the others. The worlds have in common north and south polar caps that extend around the globe and which cannot be penetrated. Otherwise, the worlds have oceans, islands, and continents in varying degrees of concentration.

You can vary some of the world conditions by taking advantage of the options offered during the world-building phase of game setup. Raise the temperature, increase or decrease the amount of water on the world, change the game's time scale—make the game your own, in other words.

The one non-random, predetermined world available from the setup menu is our own. You owe it to yourself at least once to play the game of *Civilization* on familiar territory, testing yourself against the geography of our home planet.

Levels of Play

Sid Meier's Civilization offers five levels of play, ranging from beginner to advanced. Naturally, the lower levels offer simpler challenges—technological advances are more easily achieved, opponents more easily defeated. Progress and production take more time at the upper levels, and opponents are substantially tougher.

Number of Civilizations

As the game begins, you are prompted to select the number of civilizations that will be involved, ranging from three to seven. If you're playing for the quick, world-dominating win, your best bet is to select a smaller number of civilizations. More nations, on the other hand, makes for a more sophisticated game, with larger opportunities for economic intercourse between civilizations,

alliances, and so on. A larger number of nations, incidentally, all but ensures that you will encounter other civilizations very early in the game, perhaps in the first few turns. If you want a better chance of being left alone for awhile, your best bet is to play against a smaller number of opponents.

The Game Turn

Civilization progresses through a series of turns, each representing the passage of a set period of time. This time period ranges from 20 years per turn in the early stages of the game to a single year per turn as the game moves toward the modern world.

Turns are divided into segments, during which you make decisions regarding the production of new units in cities which have completed a unit or improvement under construction, move active units, and engage in combat or negotiation with other civilizations. Once all of your active units have moved, your turn ends. The turn sequence also applies to all other civilizations in the game.

At the beginning of a turn there may or may not be a natural disaster randomly generated by the computer and targeted at a single city. Disasters—fire, flood, and so on—can be avoided if you possess appropriate technology.

City growth, essential to a thriving and expanding civilization, also occurs, if possible, each turn. City growth is made possible by a number of factors that you will become familiar with as you play the game. Key among the factors are:

- *surplus food*—enables your population to expand.
- *an orderly society*—represented by a greater number of happy or content citizens than discontent ones.
- *capacity for city maintenance*—which means that your tax revenues—or treasury reserves—are large enough to support the various facilities, institutions, and remote units each city is responsible for.

Other factors figure in as well, but those are the most essential items for sustained city growth. As we'll see later in this chapter, the city management screen provides you with the information you'll need to know when a city is doing well, and when it's headed for the dogs.

GOALS OF THE GAME

The goal of *Sid Meier's Civilization* is to win the game by having the world's most advanced or dominant civilization. There are a couple of ways to win.

First is by completely eliminating all other civilizations. This strategy, as we'll see in later chapters, all but requires an early and ruthless commitment to combat as you devote yourself and your resources to smiting other civilizations every time you encounter them. This is a risky approach: Other civilizations may leapfrog your technology, giving them a decided edge in battle. The largest army of musketeers you can assemble won't last long against an array of tanks, mechanized infantry units, and bombers.

Nor does the destruction of an opposing civilization necessarily mean its ultimate elimination. Civilizations have a way of reappearing in other parts of the map after you've crushed them. (Unfortunately, if *you* are crushed, it's final: The game ends.)

An additional argument against pursuing complete elimination of your enemies has an economic foundation. As your civilization grows, it costs more and more to support. Other civilizations offer you opportunities for income from trade and commerce—opportunities that are denied you if you eliminate the civilization. Indeed, it's tough to navigate caravans through battle zones, so just making war on a neighboring civilization can result in economic challenges.

There is another way to win the game, and that's by surviving long enough for colonists from your world to reach the world of another star.

Ideally, these colonists will be yours. As you—and your opponents—reach the later stages of the game and advanced technologies are acquired, spaceflight becomes a main focus of development activity. Those civilizations that can will begin constructing starships, assembling modules and components in orbit above the planet. When a starship is fully equipped and loaded with colonists, food, and life-support technology, it can be launched toward Alpha Centauri. The voyage, even for the most advanced starship, will take years. When a starship reaches the Alpha Centauri system the game ends and final scores are calculated.

Score is kept in *Sid Meier's Civilization* by a formula based on the number of happy citizens in each population (2 points apiece), the number of content citizens (1 point each), the number of Wonders of the World (20 points for each Wonder), and the number of polluted squares (you lose 10 points for each square that's polluted as the game ends.)

Bonus points are awarded for being the civilization whose starship reaches Alpha Centauri first, on a formula of 50 points for each 10,000 colonists to reach the star system. You can also earn a bonus of 1,000 points for completely conquering the world.

Getting to the end of the game, whether or not you win, is quite an accomplishment, especially at the higher levels. To win a game at the higher levels means that you are truly a master of civilization, an achievement you should be proud of. As we shall see in the next section, this game is not only complex, it is laden with decisions and information, all of which must be coordinated and managed by the successful ruler. Fortunately, Sid Meier has designed an interface and game-management system that makes the information you need accessible to you in a variety of forms.

Main Map Screen

Most of your time will be spent here, guiding your forces around the world.

The map screen and layout are simple. Most of the screen is occupied by a map of the local terrain surrounding your active unit. The active unit occupies the central spot in this portion of the screen. If the area around that unit has not yet been explored, you'll see only blackness. Otherwise, you'll see the terrain and ocean squares, your own and enemy units, your own and enemy cities. City squares carry numbers representing the relative strengths of the city. Pay attention to those numbers, especially when looking at enemy territory. The higher the number, the stronger the city. An awareness of city values can help you decide which cities to attack when mounting a military campaign, or which to establish trade routes with first in order to improve your economy.

Getting around the map window is simple. *Civilization* plays itself out on a flat map of the world, which you see from an overhead perspective. Impenetrable icecaps seal off the top and bottom of the map. Circumnavigation, then, takes place only in easterly or westerly directions.

Scrolling around the map is just a matter of pointing and clicking with your mouse. You can view the entire world in this manner, one screen at a time.

Getting back to where you started is equally simple. A single keystroke centers your active unit.

Another way to get around the map is by using the "Find City" menu option, described later in this chapter.

As the game progresses and civilizations grow, you'll find yourself with more and more of the worldmap revealed; if the game lasts long enough, *all* of the squares will be uncovered. This is when your familiarity with the map will serve you best. Scroll around before making important decisions. Look at your enemies' civilizations as they appear on the map (bearing in mind that the information displayed is only as recent as the last time one of your units passed through an enemy-controlled square). Examine the layout of your own civilization, looking for areas of vulnerability or overcrowding.

Menu Bar

Extending along the top of the map display is a menu bar from which drop down the menus you use to issue orders and derive information, as well as manage file saves and other computer overhead operations.

The menu bar has several main categories:

Game: Here you have several activities.

Revolution: As your civilization reaches certain levels, you can change the nature of your government. Activating this item throws your civilization into temporary disarray, from which emerges a new form of government, with the possibilities ranging from despotism to republic.

Tax Rate: Determines what percentage of your civilization's income is devoted to taxes for the maintenance of your infrastructure.

Luxury Rate: Increases the percentage of income devoted to luxuries for your population. The greater the luxury rate, the happier your people are.

Find City: Accesses a database of all the world's known cities, especially helpful as the number of cities grows into the dozens. Just type the name—or the first few letters—of a particular city, and the screen centers on that city. (This and other game menu operations can be accessed via the keyboard as well as the menu bar.)

Orders: Here you issue orders to your various units in sequence. The nature of the orders available for issue depends upon the particular active unit.

Advisors: No effective leader operates in a vacuum. *Civilization* provides you with a variety of wise advisors whose counsel you will come to count on as you guide your civilization through the centuries. The advisors are:

- *City Status:* Shows you at a glance the cities that comprise your civilization. An important reference screen, especially as

you move into larger numbers of cities. Here's where you get reminders of what you're producing and where, how much trade each city generates, its food and resources, and so on. A good place as well to keep an eye out for problems as they develop in cities.

➤ *Military Advisor:* Even if you're not running a warlike civilization, you'll come to rely on the reports this menu offers. First, you are shown the nature of your military resources, how many of each type of military unit you have in existence, as well as how many of each unit you currently have in production. The second report comes from the battlefields, filling you in on the number of enemy units you've destroyed. This can be especially helpful if you wage war against more than one civilization, or if wars seem to be stretching over too long a period of time. Check this screen periodically to see if you're making progress in destroying enemy armies or if you're expending valuable resources on military campaigns that only seem to be whittling away at an opponent, never eliminating it.

➤ *Intelligence Advisor:* The wise player builds and dispatches diplomat units as early in the game as possible. These units serve several purposes, but key among them is the establishment of embassies in other civilizations.

Once an embassy is established, you become privy to information about that civilization. You may find that this is the most frequently visited of all your advisor screens, as it offers a rich bounty of data about your computer opponents.

Among the information your embassies can provide is the type of government the other civilization enjoys, with whom it is at war, the amount of money in its treasury, the number of military it has currently under commission (this is one well worth watching closely as you mount a campaign), and its relations with other nations.

A second intelligence-report screen provides further insights into the civilization's goals and technological capabilities.

➤*Attitude Advisor:* In order to have a civilization, you must have citizens. And if you have citizens, you have to feed them, see to their domestic needs, provide them with resources and luxuries, and generally take care of their every need. It's not easy! And your citizens are all too ready to let you know when you've let them down.

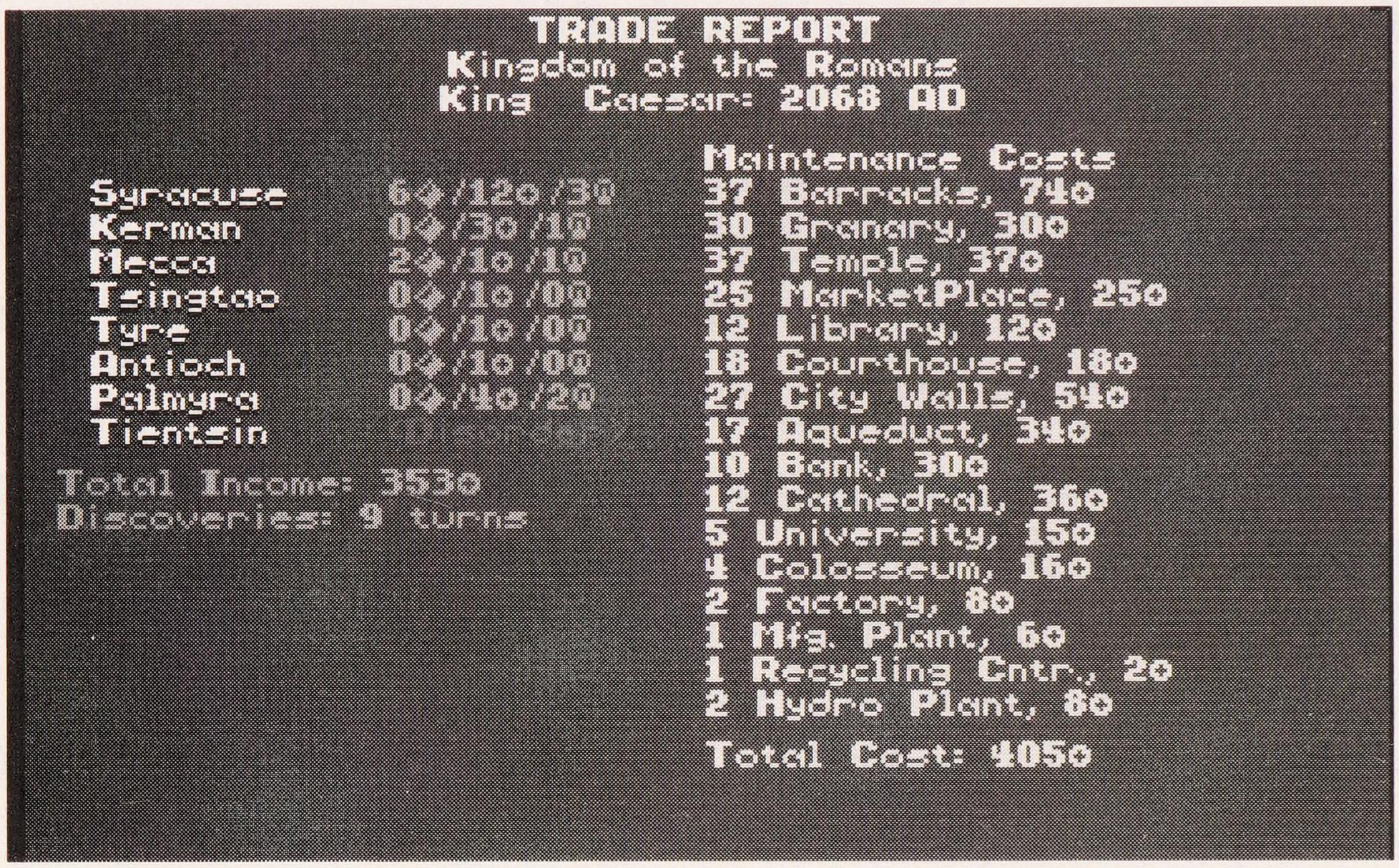
Your attitude advisor keeps you posted on the well-being of your population, filling you in on the number of happy, content, and discontent citizens in the cities that make up your civilization. As we've seen, the attitude of your population can directly and dramatically affect your overall civilization score, so it's wise to check with this advisor on a regular basis. The advisor's report includes a glimpse of each of your cities, its population, and any city improvements that have a direct bearing on the population's attitude. An overall snapshot of your civilization's attitude is also provided. This report offers quick insight into those cities where a change in production of city improvements may be needed to return a portion of the population to tranquility.

But don't worry—if you don't check with your attitude advisor, your population will let you know, in no uncertain terms, when it's growing discontent. Remember, a happy population is a successful population, able to produce more, able to grow, eager to expand.

➤*Trade Advisor:* The economic nature of *Civilization* cannot be overstressed. Wars may be won on the battlefield, but they're paid for by the treasury, marketplaces, and banks of your cities.

The Trade Advisor's report is straightforward, broken out by cities. You are shown the percentage of each city's revenues

devoted to taxes, scientific research, and luxuries, as well as specific amounts for these percentages.



Trade imbalances can wipe out your treasury--and your chances of victory. The Romans, here, are spending far more than they take in. Sound familiar?

Additional information provided by this advisor includes the city improvements you possess and their cost for maintenance each turn. You also get a picture of the next technological leap being pursued by your scientists and the number of turns waiting until it is achieved.

➤ *Science Advisor:* Here you see which scientific advances your civilization has achieved, and how you are progressing toward the next great leap forward.

World Reports: These reports are your best guides to what's going on in the rest of the world, even those parts you have not yet explored, and those civilizations you have not yet contacted.

There are several world reports:

Wonders of the World: Civilization contains 21 Wonders that can be built by individual civilizations, although only 7 Wonders are available in each of the game's three historical epochs: Ancient, Medieval/Renaissance, Modern. The Wonders report in-

forms you of which Wonders have been built, by which civilization, and in which city. This can be helpful in obtaining information about civilizations as yet unknown to you.

Remember that if you capture a city containing a Wonder, you take possession of that Wonder and reap its benefits. Target cities holding Wonders for conquest.

Top Five Cities: Just what it says it is. You see a list of the world's leading cities, with rankings based on the number of happy and content citizens as well as the presence of Wonders. Here's an opportunity to get a real edge on the game by discovering the existence of great cities and civilizations of which you may as yet have absolutely no knowledge. This information can help you target your exploration by remaining on the alert for evidence of civilizations you've learned about from the Top Cities report. When you find those civilizations, seek out the cities that place in the Top 5 and, if you can, capture them.

Civilization Score: An overview of your current score based on measurements similar to those used to determine your final score. Additional factors taken into account here include points awarded for each turn of world peace.

World Map: The entire known world, available to you at a glance.

Space Ships: Visual reports on the construction of interstellar craft by the various civilizations engaged in the game. You get a picture of the craft under construction, which will, in turn, give you a sense of how close your opponents are to launching their starship on its voyage of colonization. If they're a *lot* closer than you, you might have to use military force to try to slow their progress.

You can, by the way, bring enemy starship production to a complete halt by capturing the capital city of the civilization building the starship.

As you move deeper into the *Civilization* end game, you may find yourself referring to the Space Ship Report with increasing frequency. (It's also one of the game's most attractive screens.)

Demographics: Ranks your civilization's population in relation to the populations of the other civilizations in the game. A detailed report, it includes information on more than a dozen areas:

Approval Rating	Population
Size	Gross National Product
Manufactured Goods	Land Area
Literacy	Disease
Pollution	Life Expectancy
Family Size	Military Service
Annual Income	Productivity

As you can see, this list encompasses many of the most important aspects of real civilization, as well as *Sid Meier's Civilization.* It's a good source of information about your opponents *and* yourself.

Civilopedia: One of the true Wonders of the Interactive Entertainment World, *Civilization*'s Civilopedia is nothing less than an on-line encyclopedia containing information about virtually every aspect of the game, its features and units.

The Civilopedia should become almost as familiar to you as the main map display itself. The wise player will take the time to investigate the information held in The Civilopedia, discovering the background and context of the elements of the game. From The Civilopedia, for example, you can derive in just a few keystrokes or mouse-clicks the defensive values of different types of terrain, the attack values of military units, the benefits that accrue upon completion of a Wonder of the World, and so on. There are many dozens of entries in The Civilopedia, and many thousands of words.

You will be hard-pressed to exhaust its wealth. Even experienced master players will find themselves referring to The Civilopedia with some frequency.

(Another element of The Civilopedia worth noting is the insight it offers into designers Sid Meier and Bruce Shelley's notions of civilizational evolution. In addition to information specific to the game itself, some of The Civilopedia entries contain historical asides placing *Civilization* elements into the context of real human history. Reading these entries with care can give you a glimpse into the game designers' minds, which could, in turn, help you decide how to resolve difficult situations.)

As we've seen, the items, options, and operations hidden behind *Civilization*'s menu bar are as rich and varied as the game itself. You will come to count on the information they can provide to help you make decisions affecting the course of your civilization. But you will also learn to trust your own instincts, guided and informed by the resources available to you but not enslaved to them.

World Window

In the upper left corner of the main screen, immediately below the menu bar, is a miniature map of the known world. Here you can see at a glance how much of the great dark unknown you have revealed. This window is helpful in a number of ways.

First, the world window gives you a constant referent for your voyages of discovery and exploration. You can see the trails blazed and ocean routes opened by your explorers, get a sense of the boundaries of continents and the size of islands. Additionally, the window shows the location of cities around the world, helping you plan trade and military routes.

The active area on the main map screen is outlined on the worldmap. Using your mouse and pointer, you can zoom around the small worldmap, bringing distant areas into view quickly; when you click on an area in the worldmap, that becomes the area displayed on the main map screen. To return to your active unit on the main map screen, simply press the "center active unit" hot key.

Finally, the worldmap window serves as a spur. It reminds you constantly of the great unexplored areas of the globe. Just as constantly, it shows you how far you've come, how much of the world you've already uncovered.

Palace Window

Because you're a fine and noble leader, your people feel you should live in a fine and noble palace. From time to time in the game, they will reward your majesty with an addition to your palace. You have a choice of several styles of architecture, and as the game progresses the architectural flourishes available to you become more grandiose. A miniature version of your palace—whose construction takes place full screen, during cutaways from gameplay—is located just below the worldmap window. Again, we have a feature that reminds you, at a glance, of the progress you're making—or are failing to make. If your palace hasn't been improved in a century or more, you might want to look closely at what sort of leadership you're providing your people.

Status Window

Below the palace window you'll find several information resources that pertain directly to the progress of the game. Attend these sources with care: Careful monitoring of them can make you alert to impending danger or looming doom.

The first bit of information found here is the population of your civilization. Watch this figure over several turns. Is your population increasing at a steady and manageable rate? Are you stagnating, achieving little growth? Or are you experiencing a population explosion that will soon cause your resources to be strained to the breaking point?

Next comes the date at the time of this particular turn. Games begin in 4000 BC, unless you've changed the date during setup. Develop the habit of glancing at the date and measuring your

progress against the passage of time. If you've reached the modern age without moving far beyond primitive technology, you may be doing something—or a *lot* of things!—wrong.

Finally you will find in this window the size of your treasury, as well as the percentages of revenue you've assigned to luxuries, taxes, and scientific inquiry. Each of these is vital to the vibrancy of your civilization, but each consumes resources you might need elsewhere.

Watch your treasury figure. As your civilization grows, so do its needs and the cost of maintaining its infrastructure and citizenry. If you detect a precipitous drop in the size of your revenue, or even a slight but steady decline over several turns, it's time for you to put in some hard work on your civilization's economic resources.

One item is not in this window at the beginning of the game. And if you and your opponents play a completely environmentally benign game, it may never appear. (That's unlikely: Advancing civilizations naturally despoil the natural world. It may not be inevitable, but it's certainly been unavoidable in human history. Perhaps our generation will be the one to change this. If not, ours may be the last generation.)

The item is a Sun symbol, and its color informs you of the degree of global warming your world is experiencing as a result of industrial and other pollution. The first appearance of a Sun symbol is an immediate warning that your world is in danger of a rapid warmup whose results could be catastrophic. Icecaps will melt, oceans rise, coastal terrain squares may flood. Upon its first appearance the Sun is red, but unless steps are taken to reduce pollution, the Sun will gradually grow brighter, moving through shades of yellow until it becomes pure white. When the Sun reaches the purest level of white, the catastrophic affects of warming are unleashed.

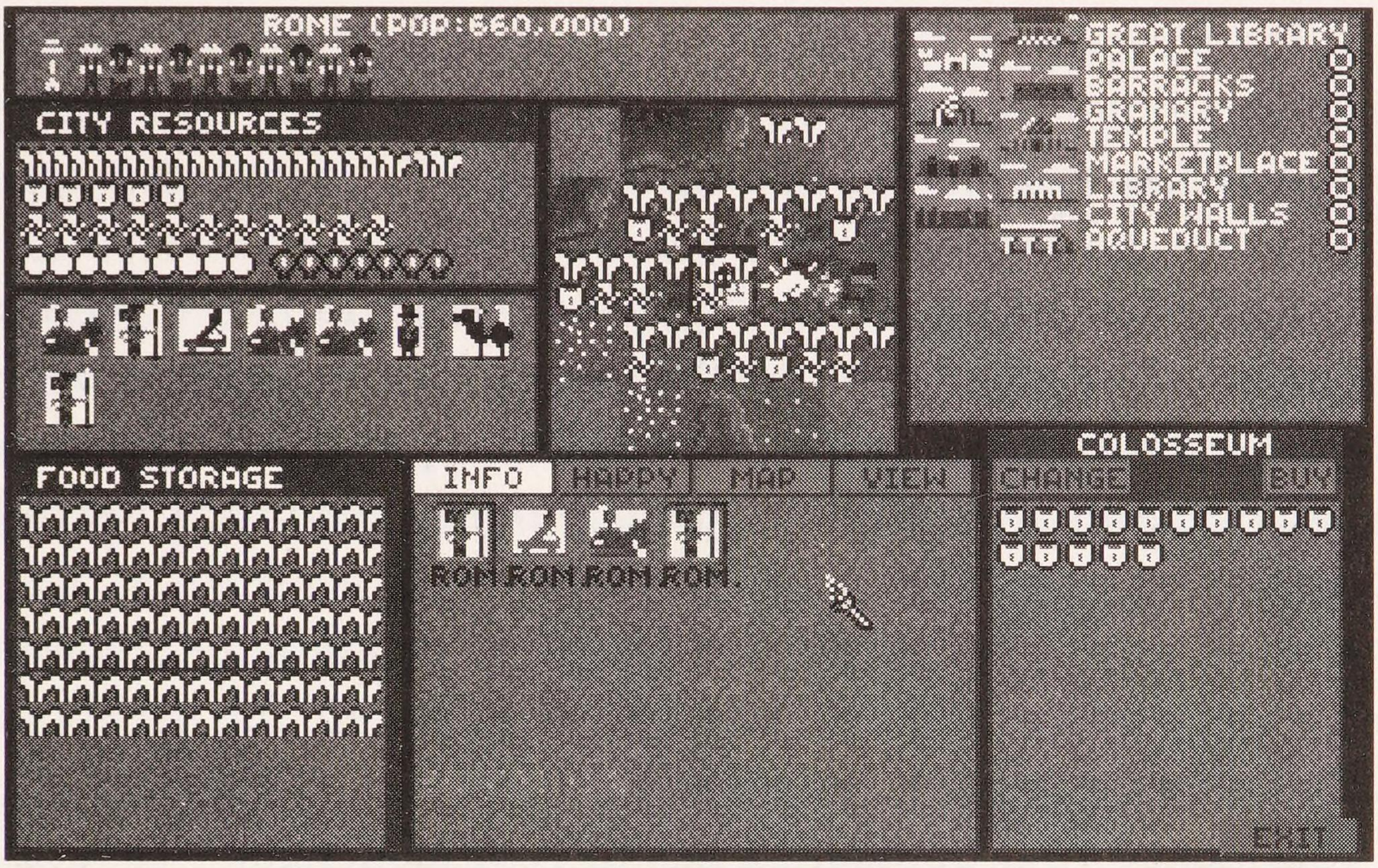
Should the Sun come out in the course of the game you should immediately seek to clean up any pollution for which your

civilization is responsible. Give thought to dismantling some of your industrial output and reducing pollution that way. If you are close to other civilizations whose cities are pumping pollutants into the air, you might consider a quick military campaign in hopes of destroying the worst of the polluting cities. But be quick: Once your world is launched on a route toward global warming, it's very hard to change course.

Unit Report

Below the status report on the right of the main map screen, you'll find information about the currently active unit. Reading down the list you will discover its nationality (which you should already know: The active unit belongs to *your* civilization) the particular type of unit, whether or not it was produced in a barracks (veteran units are produced by cities possessing barracks improvements), the number of squares of movement remaining to the unit this turn, its home city, and the type of terrain beneath the unit.

If the unit is carrying other units (a ship, most typically, carries other units) or is stacked above other units, those units are displayed as icons in the bottom portion of this report.



The city screen lets you know at a glance those areas of the city that are thriving, and those that are not.

City Screen

Second only to the main map screen is the closeup city screen that provides you with information about and management control of the functions of each city. This screen is made available to you each time a city completes production of a unit, city improvement, or Wonder. You can also open the screen for each city simply by clicking on that city's square on the main map.

Information and control functions within the city screen take several forms:

City Map

Central to the city screen is a map of the city and the squares surrounding it. Symbolic representations tell you the purpose to which each developed map square is assigned, whether agriculture, mining, or other purposes. You can use this screen to reassign population units to different types of work in order to improve the mix of resources and labor your city enjoys.

POPULATION

In the upper left corner of the city screen you will find a symbolic representation of the city's population. Each of the individuals depicted here represents a single population point. The nature of the individual figures tells you much about the nature of the city in question.

Sid Meier's Civilization divides city population into two main categories: workers and elite citizens. *Workers* are the backbone of your population, the salt, as it were, of your earth. Their mood—the confidence your population has in your leadership—is reflected in their demeanor. Citizens can be happy, merely content, or discontent, and their attitude is reflected in their appearance in the city's population display. If the number of discontent citizens grows larger than the number of happy citizens, the city enters a state of disorder during which production comes to a halt.

Elite citizens are the best and the brightest, able to bring to your city certain advantages, but at a cost. You create elite citizens, but in doing so you must surrender a portion of the city's production.

There are three types of elite citizens, cleverly represented with symbolic icons. Elvis represents the luxurious side of life; creating an elite Elvis increases the amount of trade income and luxury goods available to your citizens, thus raising their level of contentment. The Taxman is that most ubiquitous of civilization managers, the bureaucrat. Creating a taxman raises your city's level of efficiency and improves the accrual of tax revenues. The final elite citizen is represented by an Einstein icon. Creating an Einstein increases the city's level of research, aiding in speeding the development of civilization advances. Remember that the creation of an elite citizen removes productive resources from the city. You are most well off if you can wait to create elite citizens until the city has a solid surplus of food.

It's tempting to rely on the Elvis elite to lift your city of disorder if the number of discontents exceeds the number of happy citizens. Be wary of overdependence on Elvis! (Just as Elvis himself should have been wary of overdependence on cheeseburgers and other addictive substances.) Seriously, a city that has fallen into disorder is a city that has one or more serious deficiencies at its heart. Look to solve those deficiencies rather than simply "Elvising" your way around them. Buying your citizens bread and circuses in the form of an Elvis is a temporary solution to discontent, but no more than that.

City Improvements Window

In the upper right corner of the main city screen, you will find a list of the improvements you've added to that city. At first there will be very few improvements. (The first city you create will be the capitol of your civilization, so it will possess from the beginning a palace. You can move the capitol by commissioning the construction of a new palace in another city. This can be helpful if your starting city seems likely to fall to the forces of an enemy civilization.)

As the game progresses, your list of city improvements will naturally grow. The list will also include any Wonders of the World that you have built in the city in question. This is a good spot to check at a glance and see if you are successfully balancing the infrastructure needs of your city. Do you have an effective mix of different types of city improvements? Are you leaning too heavily on the mercantile side of advances? Have you attended well enough to your population's spiritual needs by building temples? What about the intellectual side of society? Does your window show city improvements such as libraries? Keep an eye on your roster of city improvements.

Should you find yourself in serious economic difficulty, you may want to consider selling some of your city improvements for

cash. You can sell Wonders of the World as well, provided the benefits they provide have not been superseded by technological advances achieved by your own or other civilizations. Give careful consideration to selling your city improvements. They were constructed at great cost in turns and effort and can be replaced only by repeating that effort. (Or by purchasing them anew, as we shall see below; but if you can afford to buy an improvement, you probably don't need to sell one.) Selling improvements that your population depends upon is a good way to mortgage your own future and limit the growth not only of your city but also of your civilization.

Production Window

Immediately below the improvements list on the right side of the city screen is that city's production box. Here you see what unit, improvement, or Wonder is currently under construction, as well as the production progress you're making toward completing the item. Progress is measured in surplus resource units, which are stored in the production box until the price of the desired unit is achieved.

This is perhaps the key section of the city screen. Here you make the decisions that determine the makeup of the city, and the forces it can dispatch to other locations. Clicking on the "change button" at the top of the production window takes up to a menu of available units, improvements, and Wonders. This list will evolve as the game progress and civilization advances are achieved. Some items will disappear as they are superseded by more advanced technologies, while others will be added to the list. Select from the list the item you wish to produce, and its icon appears above the production box.

You can change the city's production at any time before an item's completion with no loss of accrued resources. This can be a very effective advantage if you find yourself in quick need of a military unit from a city that has stacked up a fair amount of

resources toward an improvement, for example. If, however, you have a greater number of resources than the desired unit requires, the surplus is eliminated and the production box emptied.

If you are creating a Wonder of the World and another civilization completes that Wonder first, you are taken to the appropriate city's production screen and prompted to reassign production to another unit, improvement, or Wonder. Only one of each type of Wonder is available; that's why they're called Wonders.

Information Window

This portion of the city screen provides you with valuable information and insights into the nature of the city. At a glance, and via a series of mouse clicks, you can see the defensive advantages or vulnerabilities the city possesses, the trade routes it enjoys and the amount of revenue they generate, the location of the city—and its trading partners—on a worldmap, and even a fairly idyllic artistic portrait of the city which will show you the evolution of its architecture over the passing centuries.

As your civilization grows beyond primitive technology and into the ages of industry and widespread exploitation of resources and the environment, your city's information window will show the city's potential for polluting the landscape around it; this potential is displayed in the form of industrial smokestacks, each of which increases the chances for pollution by one percentage point.

The status of defensive military units is indicated by their representation: Shaded units are on sentry duty, while those encased in a dark border are fortified. By clicking on the defensive units you can relieve them from sentry or fortification duty and return them to active status; further orders can be issued to these units upon your return to the main map screen.

Use the information in this window to keep tabs on a city's defensive posture. You would be wise to check the defenses of cities close to battlefronts frequently. Coordinating defensive

forces and production or dispatch of military units from other cities can spell the difference between a city's ability to withstand siege and dooming it to fall under enemy domination.

Food Storage Window

Populations must be fed. A wise ruler is one who produces more food than his city's citizens can consume in a single turn. Only by storing food above and beyond your immediate needs will a city truly be able to grow beyond its early stages. When your stored food completely fills the food storage window, your population grows, emptying the storage area to begin the process of storage and growth anew.

The food storage window, in the lower left corner of the city screen, gives you a picture of your city's food resources and tells you whether they exceed the population's appetite. Surplus food is indicated by icons placed below a dividing line in the window itself. The nature of the food storage window changes as your civilization achieves pottery, which makes possible the construction of granaries for the storage of surplus food. Once you've built a granary, you lose only half your stored food when your population grows.

Remote Units Window

Immediately above the food storage window, on the right side of the city screen, you'll find a picture of the remote units the city is supporting, as well as a representation of the costs of supporting those units. These units may be those actually produced by the city at hand, or those which have been reassigned to this city for support. It costs resources to maintain units away from home, and that cost is directly deducted from your resources. Should you lack the resources needed to support remote units, those units disappear from the world. Likewise, if a city that is supporting remote units is captured or destroyed, those units are taken out of play. Bear in

mind that should you change your type of government to either democracy or republic, maintaining remote units results in an increase in domestic discontent.

City Resources Window

How is your city doing in regards to food, resources, trade, and luxuries? Is it contributing to the development of new technologies and civilization advances? How much corruption is present in the city? What are its tax revenues? This window serves to answer your questions.

The first line of information is comprised of grain symbols, representing the city's food production. Each population point needs two food units per turn. A break in the line of grain symbols indicates that the city is producing surplus food, with the excess symbols placed to the right of the break. Should you see blackened grain symbols, be aware that they indicate agricultural shortfalls: You're not producing sufficient food to feed the city's population. Next comes the city's resources, represented by small shields. Again, a break in the line indicates the presence of surplus; blackened shields indicate that you're consuming more resources than you produce. Let the shortage of resources grow too large and you will start losing units of city improvements as a result of being unable to support them.

The third line of symbols represents your city's trade revenues, which are generated by dispatching caravans to distant cities or by developing special resources such as gold or gems that lie within your city's sphere of influence. As with the other representations in this section of the city screen, surplus trade revenue is placed to the right of a break. Farther to the right will appear blackened symbols, indicating the amount of trade you lose to corruption. The farther your city is located from the capitol, the greater a problem of corruption becomes. Building a courthouse improvement can help reduce corruption.

Your city's trade and revenues flow in three directions, which are represented on the next line of information. Luxuries, taxes, and scientific research are the three categories, depicted here as diamonds, coins, and light bulbs. You can vary the percentage of revenues assigned to each category and, as a result, the symbolic representation will change. Creating elite citizens also affects these categories. Create an Einstein, for example, and the number of light bulbs displayed will increase.

Between the main map screen and the individual city screens, you have the tools needed to enter the world of *Sid Meier's Civilization*. A word should be said here about the care and thought that have gone into the design and execution of these screens.

You would be hard-pressed to find a deeper and more resource- and information-filled game than *Sid Meier's Civilization*. Yet at every step of the game, Meier has endeavored—and generally succeeded—to simplify the manipulation of units, make easily accessible vast amounts of crucial information (usually in clear symbolic formats), and ensure that your time is spent playing the game, not trying to remember arcane and arbitrary command structures. The design of this game is absolutely masterful.

Play around with the various elements during your first few turns at beginner level. Relax and let the game itself guide you. (But don't feel too bound to follow the advice screens that are available to new players: The advice is general and not necessarily the best approach to each situation; certainly the advice screens don't represent the *only* approach to solving a particular problem.)

Those first few turns—indeed, the first couple of game you play—should be undertaken for gaining familiarity with the game, rather than the immediate thrill of winning. This is a game that grows with you as well as on you, and you are unlikely to win your first time out. You will, however, be gaining skills that will make you a better player the next time around.

And If You Lose ...

You can learn a lot from losing this game, although there's no question that it won't be as much fun as winning.

After the destruction of your civilization, there are several information screens that will repay study. First is a graph showing the rise and decline of all the civilizations in the game. Here you can see, depicted over the span of time the game encompassed, the rise and ultimate demise of your own civilization in relation to those of your opponents. Take a few moments with the graph. Focus your attention on the point in history at which other civilizations burst ahead of you in development, laying the groundwork for your eventual downfall. From the graph, you can get a good picture of the point at which the tides of *Civilization* turned against you. Hindsight may make you a better player next time.

Next is a horizontal graph showing the wars in which you've been involved. This gives a sense of the length of time those wars spanned, as well as the number of different adversaries you engaged or were engaged by. Considering the fact that you lost the game, you might examine this graph with an eye toward whether or not your civilization was too militaristic. Perhaps you should have done more negotiating, less warmaking.

Finally comes the most instructive of all the post-game information resources. This is the replay, in symbolic form, of the entire course of the game. Here you can see cities created, empires spread and recede, and get a real sense of what you were up against, and what finally defeated you.

The object of the game, though, is not to lose, and in the next few chapters we'll look closely at some strategies that can increase your chances of emerging victorious.

Chapter 4

Crude Huts and Rough Implements

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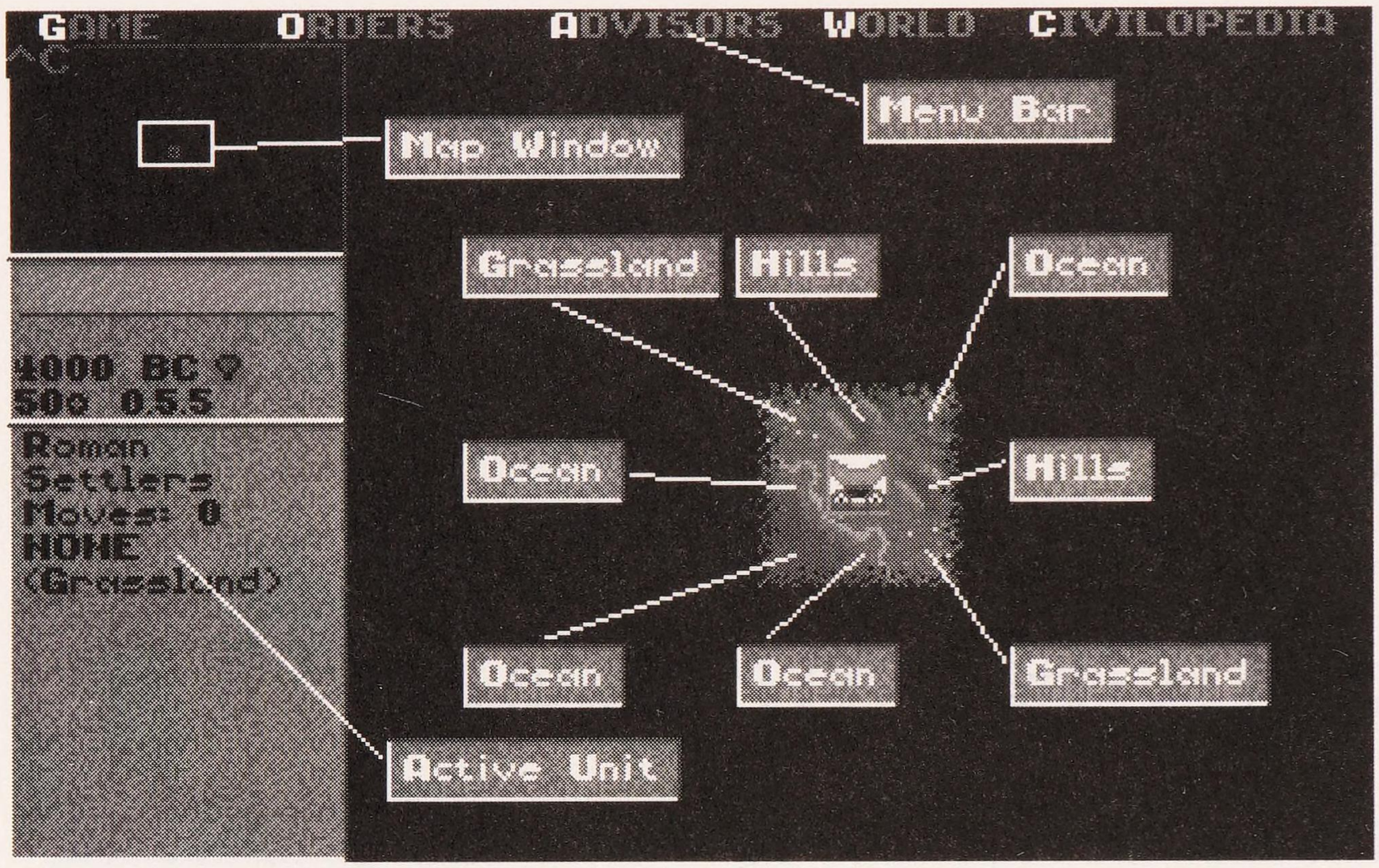
Critical mass has been achieved. Whether through inspiration, circumstance, or sheer accident, hunter/gatherers have reached the point where they're ready to put down roots, build cities, develop agriculture. Pre-history is on the brink of becoming a thing of the past. It's time to start building your civilization.

You don't start with much. As noted, *Civilization* takes as its premise the creation of a world-striding culture from the ground up. And ground is pretty much what the game gives you in the beginning.

Starting with a single band of settlers, your challenge is to establish a city, ensure its security, feed its inhabitants, and lay a foundation for growth and exploration. You are ignorant of the nature of the world: You can see but a single square of land. All else is hidden by darkness, unknown territory. Where, then, should you locate your civilization?

Site selection is crucial: A successful city must have natural resources to draw upon for agricultural and industrial growth. At the same time, especially at the upper levels of the game, you can't afford to spend too many turns looking for just the right spot. Your initial band of settlers is vulnerable to attack from other civiliza-

tions and from barbarians. At lower levels of the game you should establish your first city within half a dozen turns, more quickly if possible.



The game begins in 4000 B.C., about the time the Sumerians created the city of Ur. Your own settlers know little about the world into which they have been thrust—only that to conquer it they must build a civilization beginning with a single city.

If playing at Warlord level or above, it's advisable to establish your first city on your first turn, no matter what the nature of your location. At the higher levels, your opponents develop more rapidly than you, and you cannot afford to lose time to them.

Decisions, Decisions

The thing about civilizations is that they demand decisions. When you create your first city, you also face your first choices: What areas of knowledge will your wise men pursue, and what pieces will your city produce?

From the very first turn, your civilization is climbing a tree of knowledge. Each branch makes other, higher branches available, but each also cuts you off, at least temporarily, from other branches.

Because *Civilization* is a game of conflict, it's vital that your citizens be able to defend themselves against attack, and, if you choose, be able to mount offensives of their own. To that end, a good first pursuit for your wise ones is knowledge aimed at military ends. A successful foundation can be built by pursuing bronze-working first: This gives you the ability to create a phalanx, a better armed defensive force to protect your cities, followed by iron-working, which gives your legions a strong offensive unit.

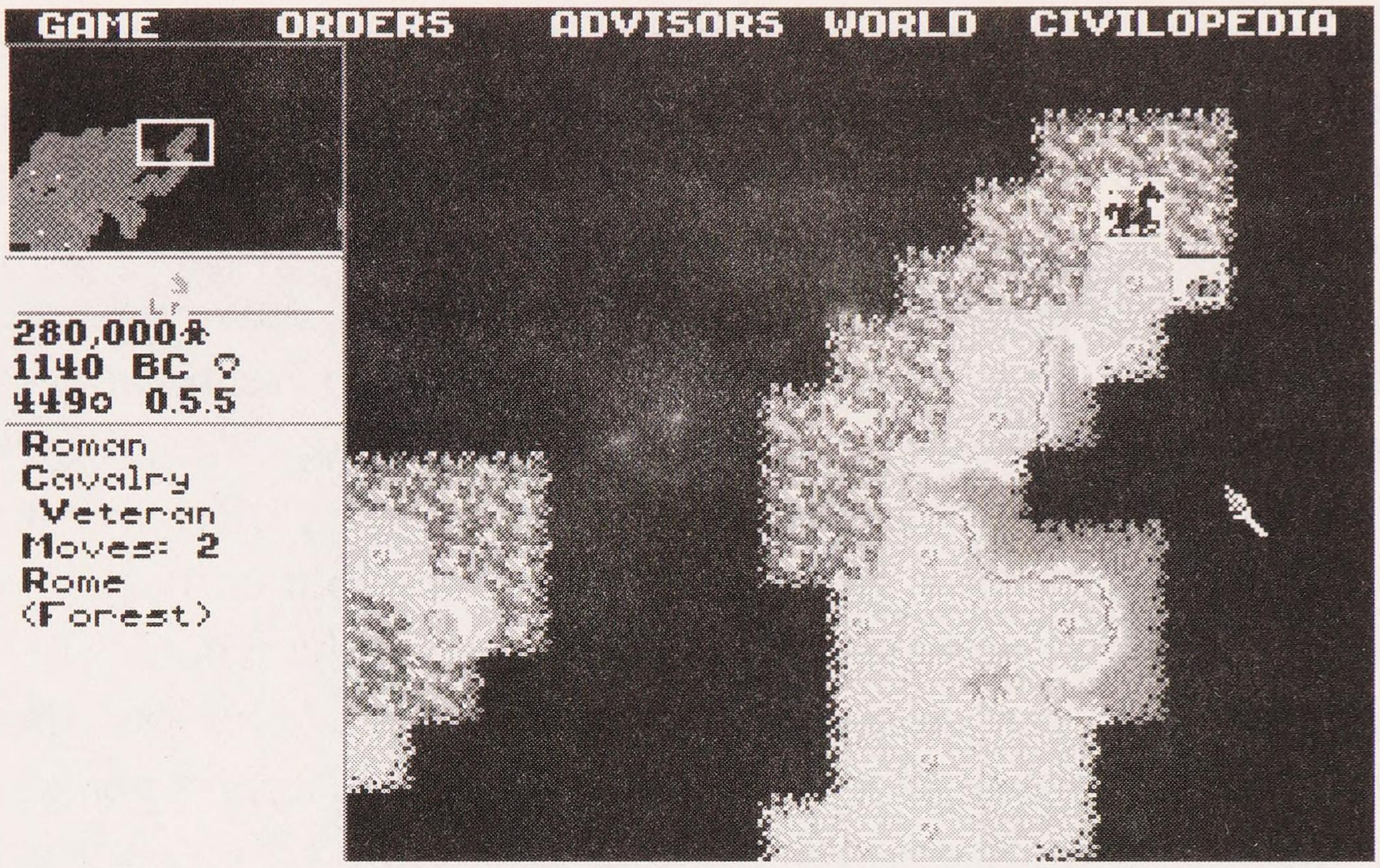
Mobility is equally important, and among your early advances, you should pursue horseback riding and the wheel. These make possible cavalry units (horseback riding) and chariots (the wheel) which move farther—two squares of even terrain per turn—than units on foot.

Don't neglect the abstract side of knowledge: It yields practical results. *Civilization*'s world is vast and must be explored. A case can be made for first pursuing the alphabet, which lays the groundwork for mapmaking which, in turn, lets you create triremes, early ships for exploring the boundaries of your world. An alphabetical foundation lends other benefits as well: The basis is laid for literacy, from which your civilization can derive a host of other advantages.

Experiment. Civilizations are supple: There is no one infallible pathway to success.

CIVILIZATION KEY

The earliest units you acquire should be selected for defensive, offensive, and mobility factors. Defend your home city first, but use your more mobile units to open up the frontier.



The city screen lets you know at a glance those areas of the city that are thriving, and those that are not.

LOCAL QUESTIONS

To some extent, terrain and location can help you decide which pathways to pursue. All that darkness surrounding your initial band of settlers must be penetrated. The more quickly you get your bearings and explore your world, the more likely you are to know where the challenges will come from and what form they are liable to take.

For that reason, it's wise to make yourself as mobile as possible as early in the game as possible. The extra square of mobility offered by cavalry and chariots is vital for rapid exploration of the plot of land on which your civilization is planted. *Civilization* deposits you on an island or a continent, and either location can affect your game. If you're on an island, you need to pursue a shipbuilding course, enabling you to dispatch ships in search of other islands or continents you can settle.

If you're located on a continent, shipbuilding can probably wait a while. You'll likely find yourself sharing continental space with at least one other civilization, possibly with several. Ship-

building in such a situation can wait until you've better secured your position on your homeland.

Either way, cavalry or chariots will help you explore your native turf more efficiently than footsoldiers.

Even as you ponder these and other decisions, the other civilizations of the world are making progress, building cities, gathering armies, acquiring technologies. Sooner or later, you will encounter them. The decisions you make at the start of the game will help determine the nature of the game's conclusion.

Once established, the city must be secured. The first piece to create is militia. Taking just a handful of turns, that militia force will help defend your city against attack.

The dark screen surrounding your city beckons: This a world to be explored and conquered! Don't yield too quickly or too completely to that temptation, however. The world is filled with adversaries and barbarians, and your city, in its early stages, is woefully susceptible to their force. Keep your first militia safely within your city, fortifying the unit to withstand enemy attack.

A good general rule is to follow the production of that first militia unit with the production of a couple more in quick succession. With these, you can begin to explore your island, further fortify your city, or establish pickets to alert you to approaching enemies.

With at least one militia unit fortified within your city, and another one or two on missions of exploration, it's time to vary the city's production.

CIVILIZATION KEY

Your first two militia—or other military—units should be used to defend your city. Fortify the units. Don't forget to replace them with more capable defenders as new technologies and units become available.

Chapter 4

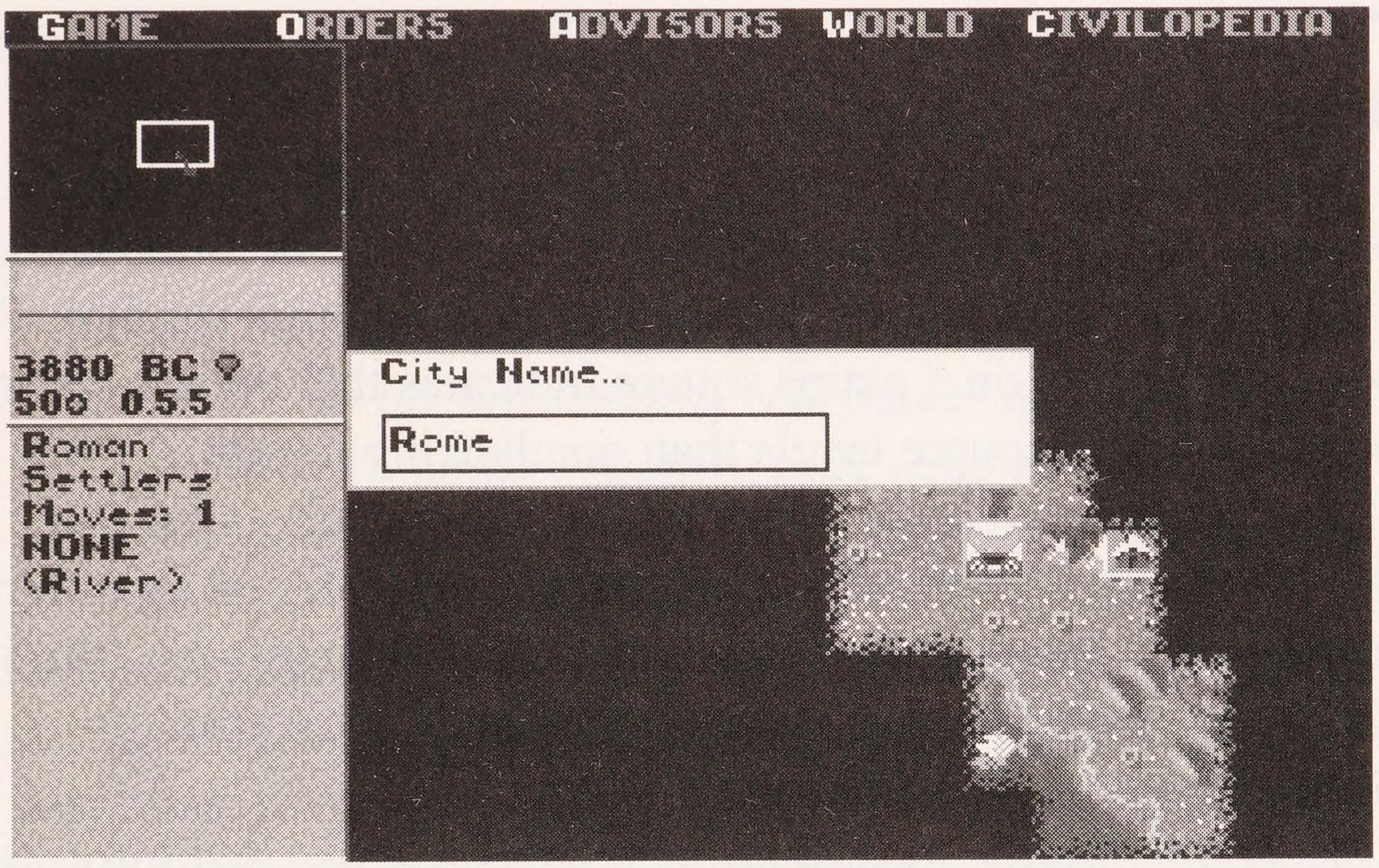
By this point, you have likely achieved one or two civilization advances. It's time to begin taking advantage of them. If your wise people have delivered bronze-working, shift your production to phalanxes for a few turns. A phalanx offers a better defensive factor within your city, so leave at least one there, fortified. With a phalanx in place, you can free your militia to move outward, extending the periphery of your pickets and further exploring your island or continent.

Perhaps you have pursued the alphabet and mapmaking rather than metals. In that case, you can produce your first trireme and send it forth on a voyage of exploration in search of other islands and continents. The world is beginning to yield its secrets to your civilization.

Lay of the Land

As you fare forth from your starting point, revealing terrain squares as you go, keep an eye peeled for easily exploited resources. Some of these squares will be available for immediate exploitation by your home city. Others must await the creation of new cities closer to their location. As you place your cities, bear in mind that some squares will never, because of their location, be available for production, although they may be developed for other purposes, such as bringing water to available squares.

Certain types of terrain are more beneficial to your cities than others. Look to locate your cities in spots that offer easy and worthwhile exploitation of resources. The easiest squares to exploit are those whose resources are immediately apparent:



Situating cities on rivers, with other easily exploited resources nearby, is a large step toward ensuring constant growth.

➤ *Rivers* were where the first real civilizations sprang up. As in earth's history, the rivers in *Civilization* offer plentiful water for irrigation, and productive soil for agriculture.

➤ *Grassland* squares are agriculturally bountiful; irrigate these squares and your breadbox will overflow.

➤ *Hills* can be mined for minerals.

➤ *Mountains* can also be mined but are more effective as a defensive resource behind which you can build a city. Remember the Swiss!

➤ *Plains* squares have good—but not great—resources of timber and other materials and can be irrigated to increase their agricultural potential.

➤ *Terrain squares* can be modified to increase their productivity. Some squares you may wish to alter include:

➤ *Forest* squares are good sources of wood and other resources, but can be converted into plains.

➤ *Jungle* and *Swamp* squares can be made into grasslands or forest squares.

➤ *Grassland* can be converted into forest.

Some squares possess increased yields of valuable resources, indicated by a special symbol in the square:

If you see *fish*, for example, in an ocean square, you know that square will yield increased food production. The same is true for forest and even tundra squares that hold a *wildlife* symbol. The presence of *horses* on a plains square indicates that the square will generate higher resource levels than one lacking horses.

Extra mineral resources are indicated by symbols for *oil, gems, coal,* and *gold*. Coal resources are best exploited by mining, while the other mineral resources are exploited simply by falling under the control of a city. Their trade potential is tapped by building a road through the square in question.

Keep tabs on the location of resources and use that information to plan the location of your cities. If you can see the resource squares as economic in nature—which they are, of course—and bear in mind the vital importance of a strong economy to your success in *Civilization,* you'll have taken a large step toward their careful and profitable exploitation.

SERENDIPITY—OR BARBARIAN ENCOUNTER

As you wander around the map during the early stages of the game, you will, from time to time, uncover a symbol representing the leavings of an ancient civilization, the presence of valuable materials, the presence of a minor tribe, or the location of bands of barbarians of varying population and level of technology. Think of these as *serendipity squares*. The serendipity symbol is the same for each: You don't know what's there until you move onto that square.

Often, what you find will be delightful: An ancient scroll that immediately grants you a particular civilization advance, a storehouse of money, a minor tribe that becomes a part of your civilization.

CIVILIZATION KEY

Serendipity squares are scattered at random across the world as it is constructed. Moving onto them can uncover wealth, wisdom, friendly tribes, or angry barbarians. Because of the barbarians, you should move onto serendipity squares only with military units, preferably a unit with a high defensive factor.

Other times, you will encounter barbarians. Then you have no choice but to fight; barbarians are short on talk, long on plunder. It's best, then, to uncover a serendipity square with a unit that possesses at least some defensive capability, enabling it a chance of withstanding barbarian assault, and a further chance of striking back against the barbarians.

Occasionally you'll defeat a group of barbarians only to see their leader escape. Barbarian leaders resemble diplomat units. If you can spare the resources, you should pursue the barbarian leader, tracking him down and attacking him. Rather than simply destroying these units, you capture them and reap a bounty that is paid into your treasury. As the barbarian leaders have no defensive capacity on their own, this is essentially found money, and well worth your time to pursue.

MORE SETTLERS

While exploration is vital in the early stages of the game, you must be careful not to neglect expansion of your civilization itself. The temptation, particularly if you find yourself located in proximity to other civilizations, may be to focus the productive output of your first city solely on defensive or offensive military units. Be wary of this approach. Although military units are crucial, so is the establishment of other cities and, before that, increasing the productive

ductive capacity of your initial city. To do this, you must build additional settlers.

When your city produces its first band of settlers, check the main management screen to get an idea of the purposes to which the settlers must immediately be used. Of particular importance is your food supply. If your city is located in a fertile area near a river, you may find that you're producing a small food surplus already. Should that be the case, you can send your settlers forth to establish another community right away.

Think carefully about this strategy. Your city, with its limited resources, must support the settlers until they reach the location for the next community, a location that will lie at least three turns away from your original site. If you dispatch your settlers too quickly, without first increasing the production of their hometown, you run the risk of being unable to support them on their journey. There are few things in the early stages of the game that are more frustrating—and avoidable—than having units removed from play because of your inability to feed them. Wasted effort can be fatal in *Civilization*.

If, then, you feel your food supply is marginal, barely sufficient to support your city and the units you've placed in other locations, your first duty is to increase your agricultural productivity. Put your settlers to work irrigating and cultivating the arable land available to you. This is land with water flowing through it, or with water resources located contiguous to the square you wish to cultivate. Remember that your city can draw resources only from those squares extending north, east, west, and south of the city itself; you will derive no direct benefits from squares lying in diagonal directions from the city. Also, your city's productive capacity is limited to two squares's distance along any of the available axes: Beyond that, the city won't benefit from your development labors.

You might, however, find yourself with untillable flatland located along one of those axes. This can be desert or even grass-

land with no readily available water supply. If there's water a square or two away in a location that cannot directly benefit your community, you might still consider sending settlers out to cultivate those squares. The settlers can be used to build irrigation works through which water will flow to land that will be agriculturally worthwhile for your city. You will work your way back to your city's zone of control, in other words, creating the infrastructure that will support agriculture in previously worthless land. That's how civilizations grow.

Not all of the land your city controls will be used for agriculture. Hills contain minerals that can be mined; forests are sources of timber for industry; some jungles and swamps contain other resources. Exploiting these resources takes different forms. Building mines, like constructing irrigation systems, commits your settlers to several turns of labor. The resources of a forest or jungle, on the other hand, can be tapped by simply building a road through the square in question.

ALL ROADS LEAD TO ...

Roads are themselves valuable resources for your growing civilization, and are a worthwhile, if somewhat time-consuming activity for even your first band of settlers. Roads increase your mobility, making it possible for your units to travel an additional number of squares each turn. This has obvious defensive and offensive benefits, and will also, as your civilization grows, serve mercantile ends by making it easier for your caravans filled with goods to travel from city to city. As your civilization progresses and acquires new technologies, roads can be converted into railroads, further increasing your mobility. A good system of roads is the circulatory system of your civilization, vital to its health, growth, and longevity.

At the same time, roads are not built overnight. Committing your first band of settlers to building roads is generally unwise.

They are luxuries in the very earliest stages of the game, and you may not be able to afford them. It's more important to develop agricultural, mineral, and industrial resources, and then get on with building your second city.

Once that second city is established, you can return to your initial site and commission another band of settlers. By now your city should be producing sufficient food to support more elaborate construction plans, and roads may well be in order.

Where to build your first roads? That depends on the nature of the game. If you've encountered another civilization nearby, you should give some thought to your relationship with it. If you've struck a treaty, you can perhaps wait to build a road in its direction. If you're at war with the other culture, though, a road leading to the battlefront or disputed territory may give you a military advantage. Your units can be moved into place far more quickly, especially cavalry and wheeled units such as chariots or catapults.

(Remember, though, that what's an advantage to you can also become an advantage to your opponent should the tide of war turn against you. If you're in retreat from the front, the enemy can pursue you quickly along those very roads you worked so hard to build. As far as infrastructure goes in *Civilization,* sauce for the goose can certainly become sauce for the gander over the course of a very few turns.)

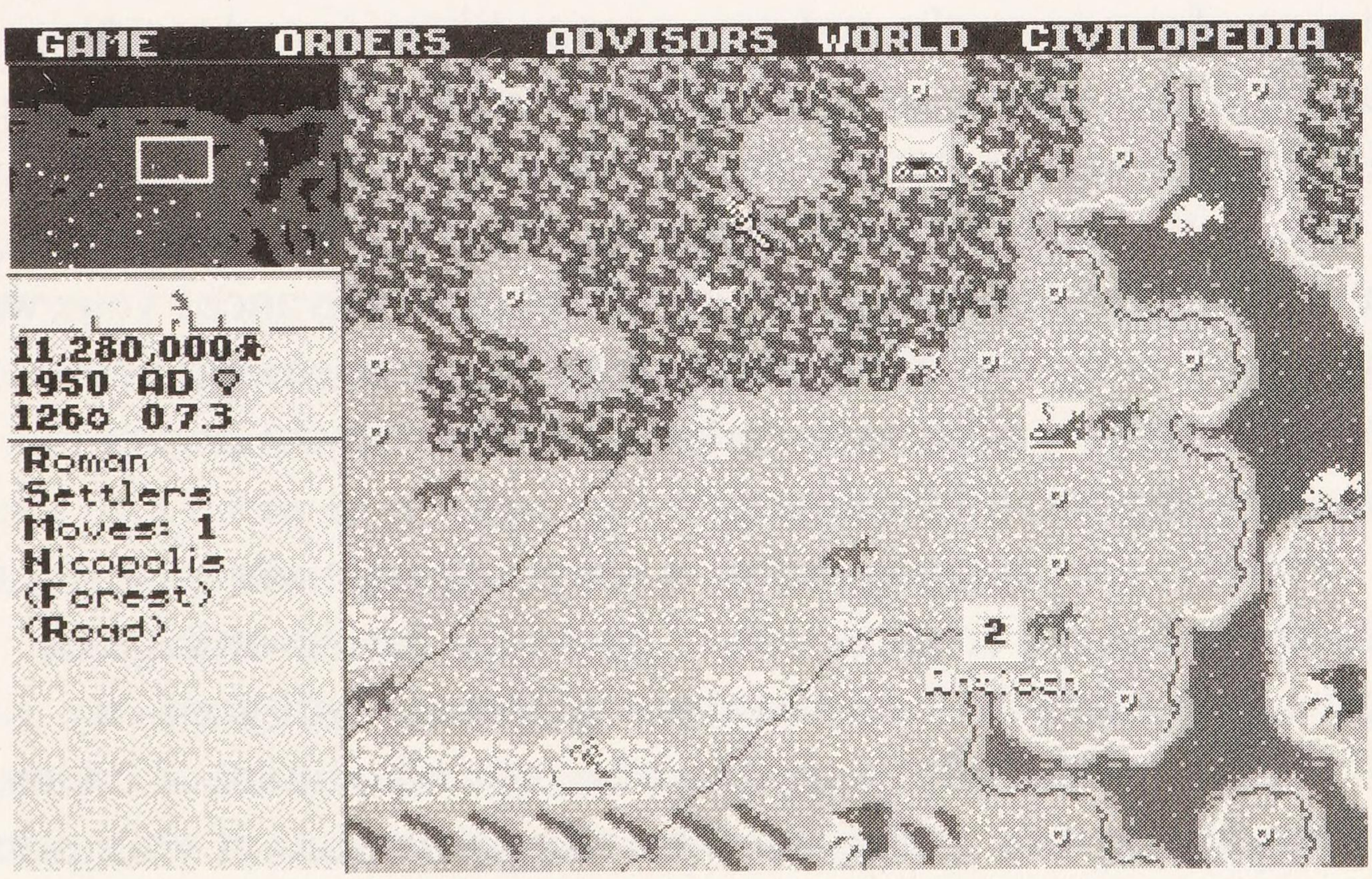
CIVILIZATION KEY

Roads not only increase trade, they serve defensive and offensive purposes. Build roads to the frontlines—but don't hesitate to destroy them if you're forced into desperate retreat.

If you're not at war, there are a couple of approaches to roadbuilding that will serve you well. Your first efforts should be devoted to building roads through the land you are exploiting.

Your roads will make it easier for agricultural and other resources to be brought to your city, increasing your income and the wealth and happiness of the city's residents.

Once the agricultural and mineral production squares have roads running through them, you should build a road to the nearest city. That done, your cities linked, use your settlers to help develop resources that the second city has not yet brought under development. Then press on toward the frontier, where you will establish another city. At this point in the game, you have sufficient units and productive capacity to commit the settlers to building roads as they go, opening the frontier and establishing an infrastructure as they do so. That way, when the next site is located and the new city comes to life, it will already be linked to thriving metropolitan areas.



As time passes and you can afford it, build roads around the periphery of your civilization. You not only open additional territory to colonization, you also create thoroughfares useful for rapid military movement should the need arise.

Another approach that will come in handy, if you can afford to commit the settlers' labors, is to construct roads around the largest possible periphery of your civilization. If you're located on an island, you might want to establish a roadway that completely

encircles it. If you're on a large continent, your roads could lead in several directions, to borders with other civilizations, or distant areas that will serve as sites for new cities as your own civilization expands. Assuming you can afford the time and labor that road building requires, you'll rarely regret building them.

BUILDING PROGRAMS

You've built a city, perhaps two. You have military units in place to defend the city, other units exploring unknown territory, maybe even a band of settlers building mines and irrigation systems. Now is the time to undertake the construction of items that will help your city and your civilization grow physically, financially, and militarily. These units and structures are called city improvements, and range from barracks and granaries to libraries and temples. Each offers advantages to your city, but each will require a commitment of time and resources.

As with military units, the nature of the city improvements you can build is determined by the civilization advances your wise people have achieved. Here, too, you must make careful decisions to ensure that you achieve the advances necessary to permit the expansion of your civilization.

Pottery, for example, seems a simple enough advance, yet it makes possible the construction of granaries for the storage of surplus food. Only with surplus food in storage will your city really begin to take off, its people well fed and content or happy. The development of pottery *must* be among the first of your priorities.

The first military structure available to you will be a barracks, and it's one that should be built as early in each city as possible. In the next two chapters, we'll see the specific benefits of a barracks for the production of veteran military units.

With a barracks and granary in place, and a few civilization advances acquired, you can begin building those facilities that really provide some depth of resources to your population.

Temples increase your population's spiritual happiness. If you've achieved writing, you can create libraries, which raise the level of intellectual activity within the city. A marketplace is essential for both the attitude of your citizens and the economic production of the city.

A complete listing of all city improvements, their cost and benefits, is available in The Civilopedia, as well as the game's manual. Here, we'll be concerned with putting those improvements to use in the game itself.

You'll want to vary your production during the early phases of the game, as city improvements tie up your city's productive capacity for quite a few turns. You might, in fact, want to postpone *any* city improvement construction until you have an effective defensive force fortified in the city, and a solid periphery of sentries posted around it. Even then, proceed with some caution.

Once your civilization has expanded in a couple of directions, though, you should apply yourself and your energies to adding city improvements to your first city. Surrounded by other cities, and your wave of outward expansion, it should be safe from all but overwhelming or unexpected attack.

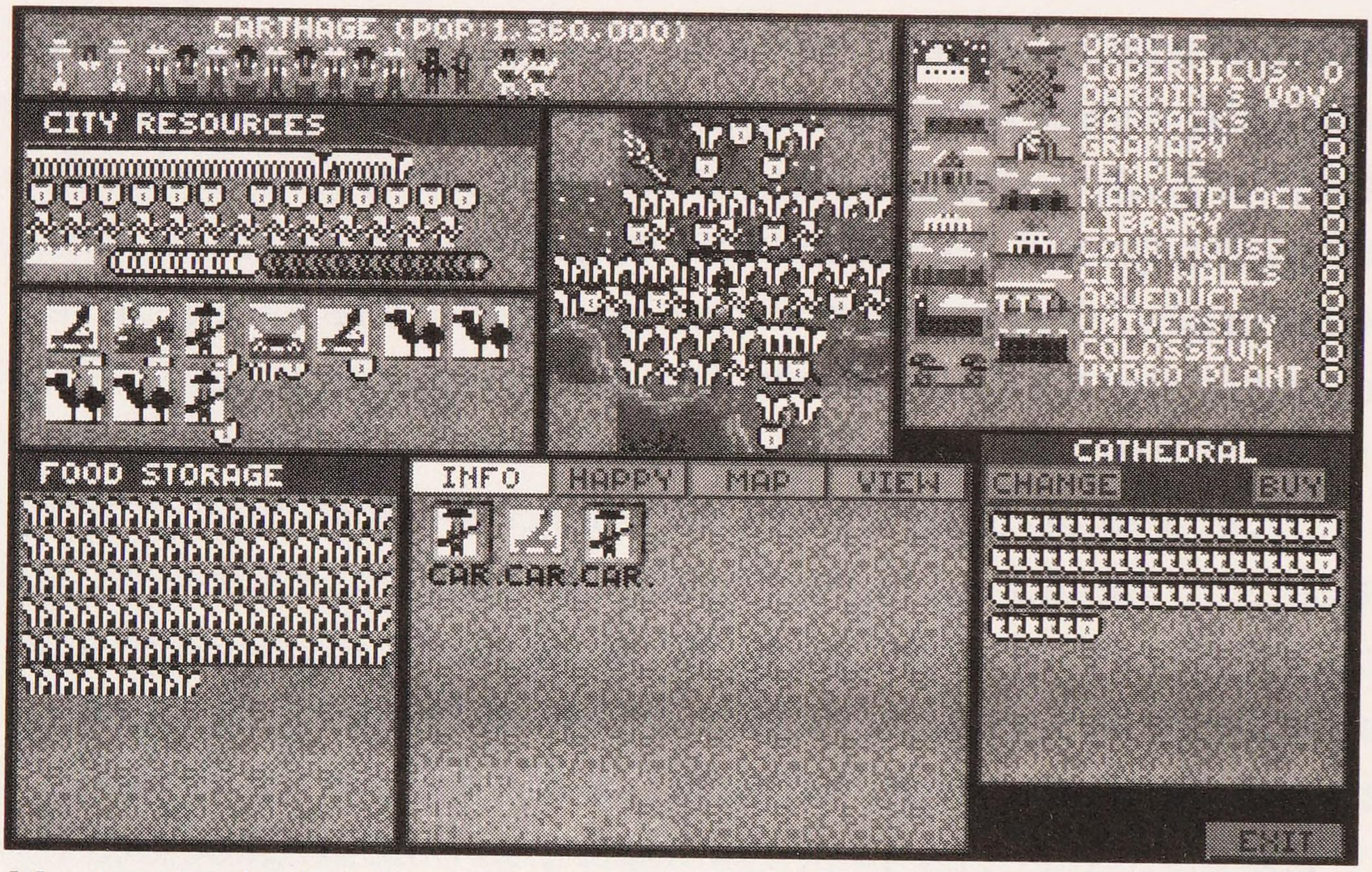
The particular city improvements you build will be determined by a) your immediate needs, b) the improvements your technology permits, and c) your long-range goals.

Immediate needs, as we've seen, include a granary for storing food, a barracks for producing veteran units, city walls for increased defense (assuming you've acquired masonry,) and a marketplace for increasing the city's revenues. Longer-range planning may call for improvements that directly address the city's spiritual or intellectual needs.

And some improvements are not improvements at all, but Wonders of the World, edifices and institutions that can stand for centuries.

WONDER OF WONDERS

Few aspects of the game can do as much for your civilization as building a Wonder of the World. Few aspects require as great a commitment of time and resources. A Wonder can take dozens of turns to construct, and cost hundreds of resource units. But the payoff your civilization derives from the Wonder may well be worth the allocation of time and money.



Monitor each city's improvements and Wonders via the city information screen. Try to balance economic, military, and cultural improvements.

Only 21 Wonders of the World are available throughout the entire millennia-long timespan of the game. And those 21 are parceled out 7 at a time, 7 for each of the three technological epochs: ancient, medieval/Renaissance, modern. In other words, a Wonder helps you make progress, but you must make progress in order to earn the ability to build a Wonder.

The commitment that building a Wonder requires may make you cautious. After all, the city in which the Wonder is to be constructed will not be able to undertake any other construction until the Wonder is completed or until you change that city's production to something else.

Nevertheless, you must give serious consideration to building at least one Wonder. The benefits it offers may make the difference between your civilization's continued rise toward the stars or its collapse into darkness.

Another reason to build a Wonder is that your opponents probably are. Keep an eye out, especially when playing against several civilizations at the upper skill levels, for notification of a Wonder's completion while you are still struggling to crawl out of the dirt. *They* aren't waiting—and neither should you!

Which Wonder to build? That question is best answered by the particular game at hand, although certain general rules apply to making the decision.

First, be sure you can afford to make the commitment a Wonder requires. It's foolish to apply yourself to building a Wonder when you only have one city, even if that city is located on an island. In fact, you should wait to undertake your first Wonder until you have three cities, with the one where the Wonder will be located possessing enhanced defensive capabilities, a granary, and a marketplace.

Second, build the Wonder that will benefit you the most. If your population is generally content or happy, there's no immediate need for a Hanging Gardens Wonder or Oracle Wonder, these being the Wonders that exert positive impact on your population's attitude. Likewise, if you're on the fast track for developing advanced navigational skills, there may be no need for you to invest the time and effort required to build a Lighthouse Wonder.

No matter what the nature of a particular game or strategy, you should consider building the Great Library Wonder. This is a storehouse for all the knowledge of the world, and provides you with unparalleled access to the technology of other civilizations. With the Great Library you come into immediate possession of *any* technology that is possessed by at least two other civilizations. The benefits are obvious. Your civilization will progress.

Wonders don't last forever. Their benefits can be superseded by advanced technology, rendering them useless and unable to be sold. If you find yourself planning to sell a Wonder as an epoch appears to be drawing to a close, you might not want to wait. Let another civilization progress beyond the capabilities of your own Wonder, and the Wonder becomes worthless, a reminder of a great past but nothing more than that.

SETTING SAIL

Sooner or later, you're going to wonder what lies beyond your homeland's shores. You may already know of a nearby landmass, discovered as you prowled along your own coastline. Or you may have revealed a coastline that shows you only ocean and more blackness. Either way, you'll have to build ships in order to learn more.

Ships can only be built in coastal cities. You will want, then, to create at least one seaport early in the game. Don't limit yourself too much, though. Whether on a large continent or all but the smallest of islands, you should place seaport cities in strategic areas around the coast, giving you access to the oceans from more than one spot. A well-placed seaport can help you get naval or transport vessels to the scene of the action faster than those setting sail from more remote locales.

The first ships you can build will be simple triremes (although they were doubtless not so simple an accomplishment when the first known sailing vessels were built more than 5,000 years ago). In order to build triremes, your civilization must possess mapmaking among its advances.

In *Civilization,* the trireme's primitive nature is revealed in restrictions placed upon its movement and its cargo capacity. A trireme can carry only two other units. Laden or not, its movement is restricted to three squares unless you've built a Lighthouse Wonder, which gives you an additional square of trireme movement per turn.

More seriously, the trireme and the sailors who crew it are as yet inexperienced in deep ocean voyages, and are without sophisticated navigational aids such as the compass or knowledge of astronomy. The seas are vast and your first craft are small: If a trireme ends a turn at sea, away from shore, it will be lost!

Because of this, you must plot your sailing routes carefully. Hug the shore at first, venturing out no more than a single square at a time, ensuring that sufficient movement squares are retained to permit return to the safety of the shoreline. Out of such tentative, frightening voyages was oceangoing navigation developed. Remember Homer, and you'll feel a poetic shiver of sympathy for those early mariners.

Once the outline of your own coast is revealed, you're going to have to fare farther. If you're lucky, either your initial land-based exploration or that first circumnavigation of your starting landmass has revealed another landmass no more than a square away. Should that be the case, you've got your first destination close at hand. Sail to the nearby land and resume your coastline exploration.

It's a good idea to carry a couple of mobile units with you to explore the interior of neighboring islands and continents. An effective practice is to board two of your most mobile unit types—chariots, cavalry, and so on—before setting sail. Then, upon making your first landfall, debark one of the units. While you navigate around the landmass, your mobile unit can reveal the nature of its interior. The second unit should be held in reserve should your first unit be lost to enemies or barbarians.

Another good reason to hold the second unit in reserve is to take advantage of serendipity squares that might be revealed as your trireme makes its way along the coast. If you have a unit onboard, it can be debarked; reap the benefits of the serendipity square—or face the barbarians who may dwell there!—and then reload onto the trireme.

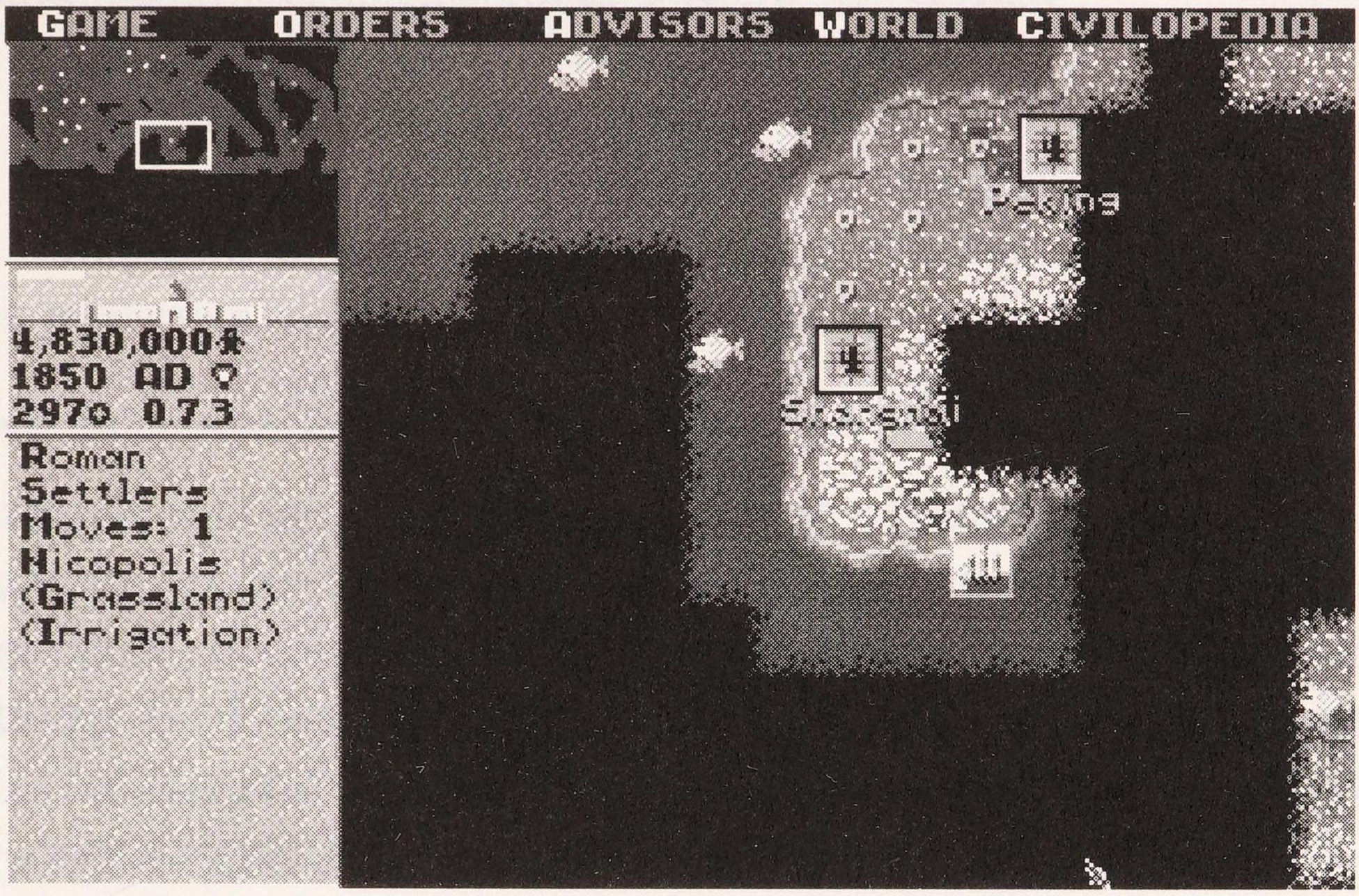
If you've achieved the civilization advances necessary for the production of diplomat units, you should carry at least one on

every exploration ship you send forth. The diplomat enables you to establish relations with other nations, giving you vital insights into their nature, resources, and size. At the same time, be wary of sending your diplomats too quickly into unexplored territory or using them to reveal the contents of serendipity squares: They have a very low defensive factor and are likely to be lost even to primitive attack.

As you circumnavigate the new landmass, you'll want to remain alert for other, farther islands and continents that might be revealed. Look sharp as well when you move into the far northern or southern latitudes for the presence of the icecaps. These long, straight stretches of tundra are worthless for colonization and exploitation, but are exceptionally valuable as shoreline you can hug to further explore your world.

Sailing Farther

Suppose, though, your exploration of your starting coastline has revealed *no* nearby landmasses. To find other islands and continents, you're going to have to sail into the vast darkness. While you will doubtless lose some triremes to the dangers of deep-ocean voyaging, you can at least take some steps to minimize the risk, if not eliminate it.



As you sail around your world--whether by simple trireme or sturdy frigate--take advantage of your naval capability to map the coastlines of continents and islands.

Situating cities on rivers, with other easily exploited resources nearby, is a large step toward ensuring constant growth. Resume your circumnavigation along the already-explored coast. Look for peninsulas that jut out far into the ocean. Position your ship at the very tip of the peninsula, placing its edge as far out to sea as possible while still maintaining contact with the shore. When it's in position, move on to the next active unit, even if you haven't used up all of the trireme's movement squares yet. Setting forth into the unexplored ocean, you'll want all three of the movements available to your trireme.

Next turn, set forth. You have only three movement squares, so make them count. Don't move too hastily. Sail out a single square and catch your breath. Has anything been revealed? If not, take your next move. Nothing? You can't get back to shore and home, so use your last movement in hopes of landfall. You'll either find land or be lost at sea.

CIVILIZATION KEY

Explore the oceans carefully: Your triremes are fragile. If forced to set sail into deep ocean, place your trireme at the farthest point of land possible, then wait until the next turn to cast off.

There is undoubtedly an aspect of hunch or intuition to this approach, but there was undoubtedly the same sort of gut reliance on instincts among the early mariners who first opened the oceans to our race. And there are a couple of things you can do to reduce even further the cost of ships lost at sea, if not their actual loss.

First, always have another ship in production or in motion. Relying upon a single, fragile trireme is the equivalent of placing all of your exploration eggs in a single basket. (Early ships were, in fact, made of reeds, so the basket metaphor is especially apt.) · Having a second or third trireme under production or actually in existence can make the loss of a vessel less costly. Your exploration program stands less of a chance of lengthy interruption.

Second, don't send laden ships into the great unknown. While you will undoubtedly want to carry emissaries and mobile units to the lands you discover, you don't have to carry them immediately. A good practice is to offload your passengers upon moving your trireme into position at the tip of the peninsula. If the ship is lost on the next turn, your units are preserved. If, though, the trireme discovers another landmass three or fewer squares distant, it's a simple matter for the ship to return home, reload its passengers and return to the new territory, this time along a familiar route.

Don't concentrate all of your sea voyages in a single area. Land is scattered at random during the building of *Civilization*'s worlds, but it's not all scattered in a single part of the map. If you fail in voyaging outward from one peninsula, look for another to serve as the springboard for your next voyage.

CIVILIZATION KEY

Put some passengers on your exploration ships! Passengers can be debarked on new landmasses, and can explore the interior, make contact with other civilizations, and reap the benefits of serendipity squares.

This is an area where the world map on the left of the main map screen comes in handy. Here you can see the paths your ships have followed, where they've been lost, where they've made landfalls. As the game progresses, more and more routes among the landmasses will be discovered. You will also develop increasingly sophisticated marine technology, letting you voyage farther and liberating you from the necessity of making a landfall every turn. As these developments occur, you'll want to send ships in wide search patterns, probing through the dark regions to find previously undiscovered territory.

FINDING OTHERS

Our purpose in this chapter is to look at the basic tools for exploring your immediate vicinity and perhaps a bit beyond. Encounters with other civilizations will be dealt with in greater detail in the chapters that follow, yet there are a few points that must be made now.

It is likely that the first "others" you encounter will be those troublesome barbarians, located at first beneath serendipity squares. (Later, barbarians will appear out of nowhere, literally: Whether they arrive by sea, or spring up on your own island or continent, barbarians dwell in and approach from uncivilized areas, map squares far removed from cities and other civilizing influences.)

Try to keep the barbarians away from land you've already tamed. Barbarians are rapacious: They love nothing better than

reducing fields to stubble, destroying mines, eliminating any traces of civilization they encounter. Don't lose time and effort rebuilding properties that could have been protected.

If you're located on a continent rather than an island, you may well encounter representatives of another civilization. In that case, you're ready to give thought to whether you'll be mounting a defensive and isolationist strategy or taking offense and launching campaigns of warfare and conquest. These matters will be examined in detail in the chapters that follow.

Chapter 5

The Best Defense

THE PERIL DEFIANT

CHAPTER 2

Chapter 5

The Best Defense

Security at home has lain close to the heart of every emerging civilization, no matter how large that civilization's ambitions beyond its initial boundaries. In *Sid Meier's Civilization,* domestic security is equally important.

History books and epics resound with stories of brave defenders withstanding onslaught after onslaught of better-armed, better-trained enemy forces. Marathon, Masada, the Alamo—the defenders might ultimately perish, but by their defense they slow the progress of the enemy, buying valuable time for their civilization to prepare a response.

Not that security is easily achieved. Civilizations are fragile things, hard to defend, easy to destroy. Managing your domestic defense will loom large among the challenges you face during the game, and it will be one of the challenges requiring the most constant, careful attention during the course of the game.

Yet without such careful defensive management even your offensive campaigns may suffer from an Achilles' heel that cripples you—or even dooms your efforts to failure.

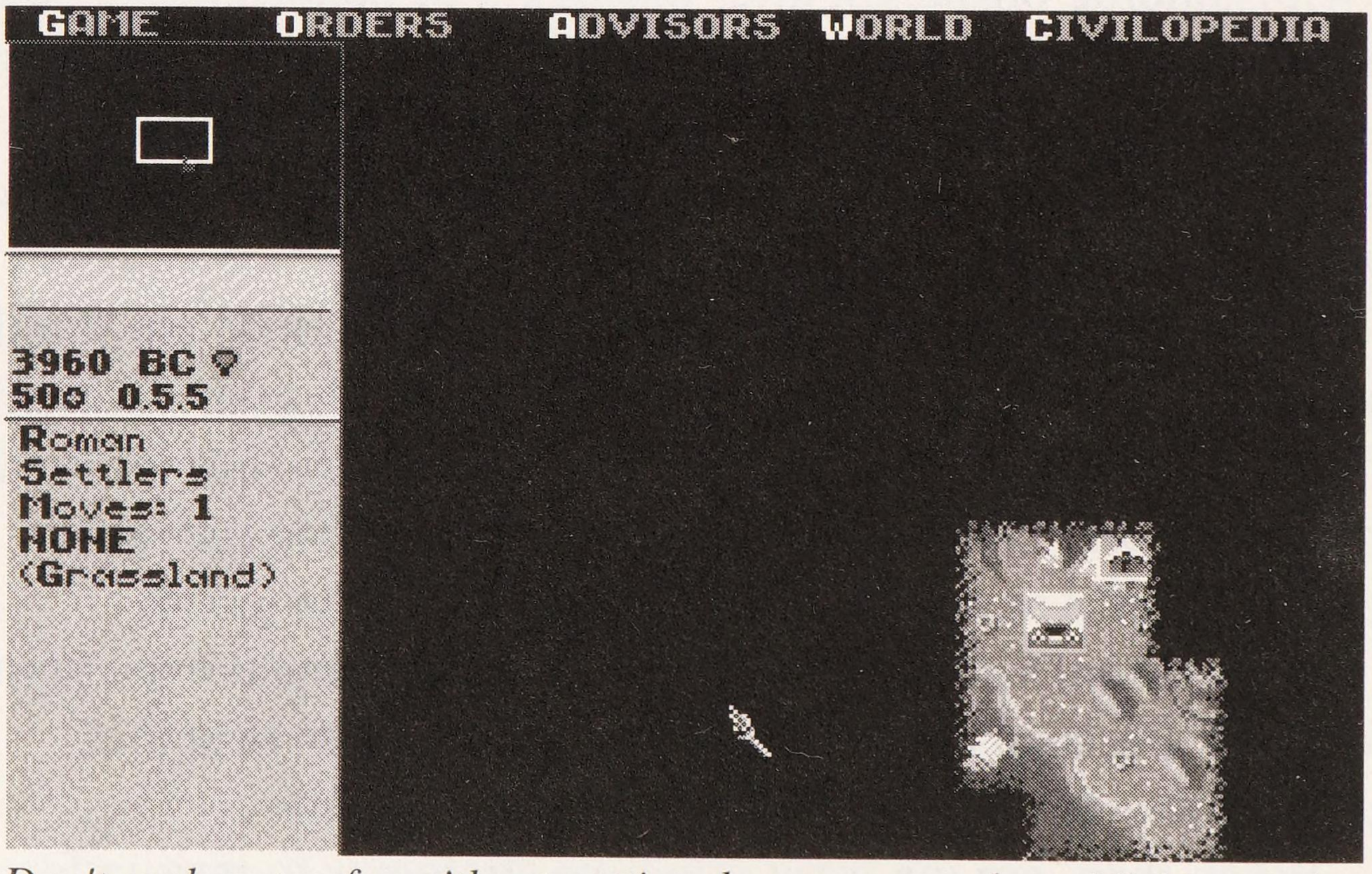
What, then, are the most effective strategies to pursue for both short- and long-term defense of your civilization?

In the Beginning

At first, you can simply do what you can. You have few tools, fewer weapons. And the world in which you find yourself is filled with hostile forces determined to bring you down.

Exploration of your borders and the interior of your home land mass has a defensive as well as colonial purpose. Thorough exploration will reveal to you the location of other civilizations, the availability of agricultural, industrial, and defensive resources, and the initial gathering places of barbarians.

Your defenses ultimately will take into account all of these factors, but your immediate need is to secure your first crude community, ensuring it the time needed to grow. As we saw in the previous chapter, your initial city's first production should be of units that can be fortified for the city's defense: militia or phalanxes, depending upon the capabilities of your city. But simply fortifying a couple of units, while sufficient for the first few centuries of your civilization's existence, is hardly sufficient for the city's long-term security.



Don't explore too far without putting down roots and establishing a city. Your settlers are vulnerable to enemy or barbarian attack.

Establishing the safety of your cities requires coordinated effort on unit production and placement, defensive construction, strategic use of terrain as a defensive factor, and the erection of "early warning systems" to sound the alert when enemies are approaching. As we'll see, the infrastructure of your civilization, its economy, and its intellectual makeup also play major parts in a sound defensive posture.

In short, your defense calls upon all your skills as a leader of a civilization. Those skills will grow as your experience as a leader grows, but for now we'll look at some sound fundamentals that can help ensure you get the experience you need.

GUARDING THE FRONTIER

You've built your first city and fortified it with a militia and a phalanx. Two militia units are currently exploring the continent on which you live, pushing back the borders of darkness. While you are currently concentrating production on infrastructure—a barracks, a granary—and plan to build an additional band of settlers to begin exploiting and colonizing the continent, you should also begin thinking about establishing defensive borders.

There will come a point at which you will disband your more primitive units rather than continue to feed and support them, but for at least the first few centuries you'll want to keep all your units active. As you develop more advanced military technologies, replace your city-bound fortified militia with phalanxes, say, and return the militia to active duty. Move them out to the marches and either place them on picket duty or use them further to explore unfamiliar territory.

Once enough unknown territory in the vicinity of the heart of your civilization has been explored, giving you a sense of the location of exploitable resources as well as neighboring tribes, begin using your outmoded or more primitive units as sentries or pickets rather than as explorers. Keeping them on exploration duty

places your civilization at risk from barbarians or invaders closer to your cities. They may be able to strike with little warning, whereas pickets on the frontier would have alerted you earlier to their approach.

Remember, barbarians are likeliest to emerge from wild and unsettled territory. Placing a defensive unit or two on guard against their approach can protect your developed lands from pillage and destruction.

Situate your pickets strategically, locating the units in spots where they will be likeliest to detect the approach of forces from other civilizations, or barbarian raiding parties. Your units will serve as a sort of primitive early warning system. They may not be able to withstand the onslaught of a strong enemy force, but by sacrificing themselves they will provide you with a bit of time to prepare a stronger defense closer to home, or to mount an expeditionary force in response to the invaders.

When placing a unit with low offensive capability—militia, phalanxes—on picket duty, you may wish to fortify the unit rather than make it a sentry. There are a couple of advantages to this: First, if the unit is a veteran unit—if it was commissioned from a city containing a barracks—the unit stands a fair chance of defeating an enemy attack; second, should you strike a treaty with the invaders, a fortified unit remains inactive unless directly attacked, even if an enemy unit occupies a square immediately adjacent to it. A unit on sentry duty will become active every turn, requiring you to return it to sentry, and slowing down the progress of the game.

If you do take this approach, using weaker units on sentry or picket duty, you should keep some stronger offensive units in proximity to the frontier. These units can wait on sentry, ready to be brought to life and moved into position should your militia- or phalanx-based defense fail.

When defending your frontier with less-capable units, it's a good idea to have a road in place leading to their position. That way if you need to move reinforcements into position quickly you

can. Your infrastructure is as essential to your defense as your military forces.

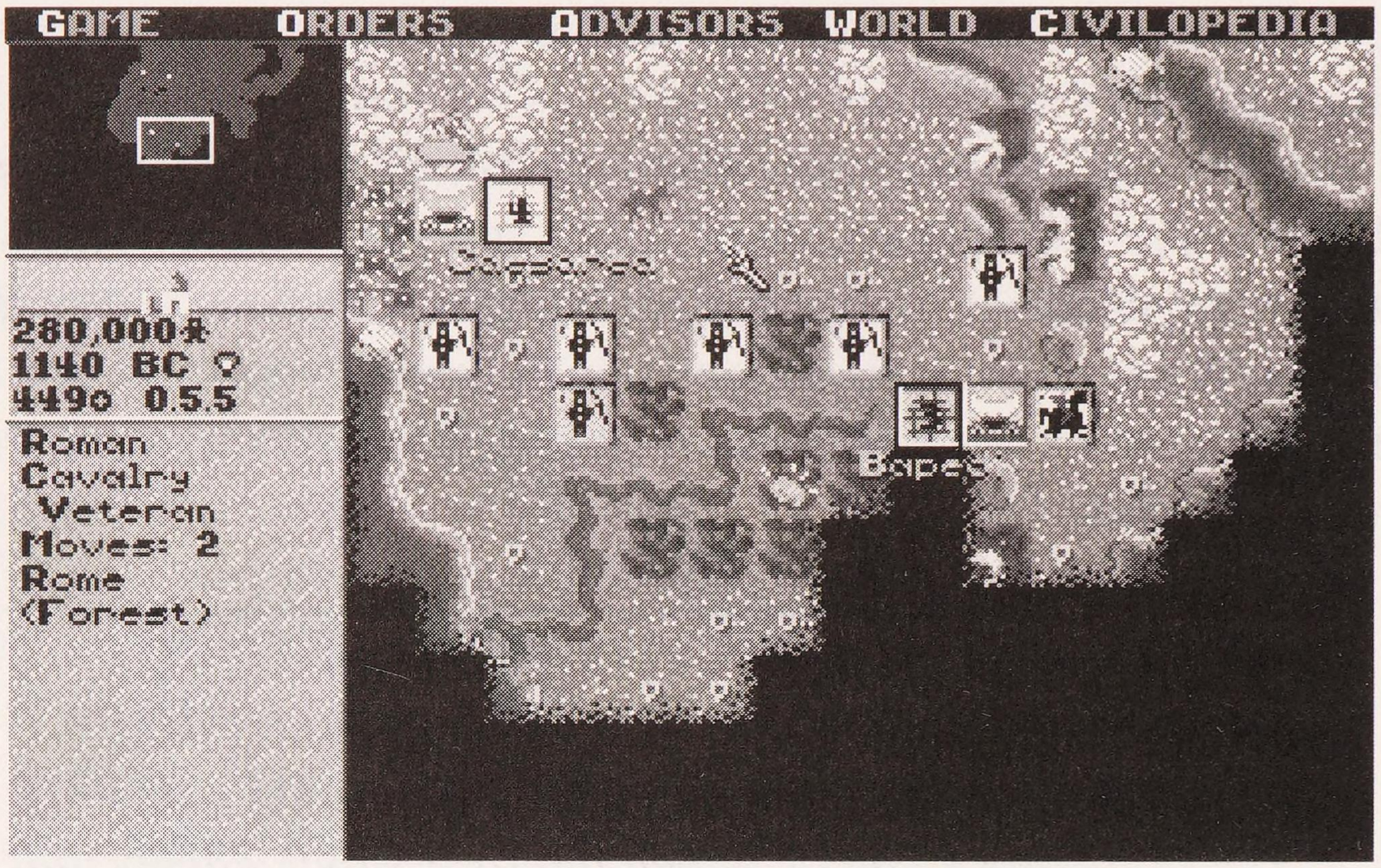
As you can afford it, deactivate the militia and replace them with defensive pickets capable of attack at higher values. These units can be placed on sentry duty rather than fortified. With these units you'll not only be alerted to approaching adversaries, but you'll also stand a better chance of smiting them down as soon as they're detected.

CIVILIZATION KEY

Don't stack units on picket or sentry duty outside city walls. Under attack, an entire stack can be wiped out by a single enemy unit. Inside a city, your units fall one at a time, giving you a chance to strike back.

Rather than stacking units on the frontier, stagger them, fortifying those closer to the border while backing them up with more powerful offensive units on sentry duty. That way, if your fortified unit falls, you can respond immediately with a counterattack.

Chapter 5



Sometimes you may have to commit a sizable force to hold back neighboring civilizations. Be alert for surprise attacks.

Lay of the Land

Terrain can play an important part in creating an effective defense. Use the land to increase your defenses whenever possible.

As you become familiar with the game, check the Civilopedia for the landscape/defense factors offered by different types of terrain. Especially effective are mountains, whose terrain serves to slow down invaders. Cities placed behind mountains benefit from the fact that, unless a road is built over the mountain, an approaching attacker comes to a halt on the mountain itself. Assuming you have in place a strong offensive unit ready to spring into action, the slowdown a mountain imposes can leave your enemies at your mercy. Try placing strong offensive units on sentry duty atop mountains. That way you control the high ground and can strike at them from above when the mountain halts their progress.

Look for natural borders to place your pickets and sentries. If you're alone on an island, its borders with the sea are your weak points. Your enemies—other than barbarian bands located beneath

serendipity squares on the island at the beginning—will arrive in oceangoing armadas. Suppose you haven't yet acquired seafaring capability. You can still erect defenses aimed at detecting and repulsing naval approaches from other civilizations.

During your initial exploration of your coastline, be on watch for signs of a nearby landmass. No more than one square away, these contiguous islands and continents represent the likeliest source of invasions early in the game. Your opponents may possess only primitive triremes and will thus be restricted to hugging shorelines as they seek navigable routes around the world. If there's a one-square gap between your land and another, you can almost bet on an enemy's use of the neighboring coastline for safe harbor at the end of each turn. (The neighboring lands also represent your own likeliest, quickest, and most easily accessible sites for expansion.)

Put units on picket duty at spots along the narrow channel separating your landmass from the neighboring one. Should an enemy vessel seek to make an approach along this coastline, your sentry will discover it. In the earlier stages of the game this approach will also serve as an effective means of locating other nations before your own civilization has acquired the ability to go to sea.

USE THE RIGHT UNITS

Generally speaking, the stronger the unit on picket or fortification duty the better the defense it establishes. This generality, however, must be tempered by a couple of important points.

First, you must bear in mind that the unit will remain immobilized while it serves as a picket or sentry. Be wary of overcommitting defensive forces to stationary positions too early in the game. You must continue to explore, to push the boundaries of your territory outward, chasing back the darkness. So search out locations that offer effective defense against enemy approach, yet

at the same time allow you to hold to a minimum the number of units tied up on defense.

Second, don't forget that remote units must be supported by their home city. This can become costly to your treasury and, once you've achieved advanced forms of government, to your peoples' well-being. Some citizens do not appreciate and will not support far-flung military forces.

Third, tailor the duty to the type of unit available. Phalanxes, militia, and musketeers make excellent fortified pickets, their defense factors being stronger than their offensive power. Chariots, catapults, and knights make excellent sentries, springing into wakefulness when contacted by an enemy unit.

Fourth, keep in mind the looming obsolescence of your units. Especially in the early stages of the game, and at lower skill levels, advances come quickly, rendering your earliest units obsolete. You want to be sure that defending units are the most advanced, strongest units you can afford.

Finally, know the difference between a sensible defensive policy and caution carried to ridiculous extremes. If you find yourself constantly using armored divisions to repel horse-borne invaders, maybe you should be on a posture of offense.

Defending Large Areas

The enemy is smart and—prolific. Use a single unit to defend a large area of approach against invaders and, if geographically possible, the enemy will eventually outflank you. Enemy units will move into position on more than one of your flanks, yet that unit of yours can respond only to one angle of attack. (This assumes a sentry, rather than a picket; if you have a fortified unit on picket, you may wish simply to take your chances withstanding the enemy attack rather than counterattacking.) Naturally, if you do counterattack, your response should be directed against the strongest opposing unit, or against the largest concentration of enemies, improving

your chances of surviving the subsequent attack. This is where it helps to have backed up vulnerable pickets with units able to move immediately into position should your pickets fall.

Another approach to defending large areas involves mobile units kept constantly on the go, patrolling areas vulnerable to enemy invasion or barbarian appearances. I would have liked, in fact, to have seen a patrol function in this game, by which the player could set ground units or ships on constant back-and-forth courses over particular areas of land or sea. Failing that, you can use the "go-to" function to guide your patrolling units. It's more time-consuming than a specific patrol command would have been, but ultimately just as effective.

Look at the area to be patrolled. Press the go-to key and select a destination for the unit in question. The unit will proceed to that destination, using its maximum available moves per turn, unless it first encounters an enemy unit. At that point, your unit returns to your control and you are free to attempt to deal with the enemy.

Another effective tool for guarding large areas of land is a good system of roads. Suppose you are located on an immense continent and have built half a dozen or so cities, yet still have great areas of land uncolonized. Those areas represent not only your easiest sites for expansion, but also your Achilles' Heel. Because the land is as yet untamed, it represents excellent breeding territory for barbarian raiders. Equally dangerous, your enemies can land expeditionary forces there without your knowledge, moving down through the wilderness to strike at the very heart of your civilization.

Even worse, by leaving large areas unattended, you run the risk of allowing the enemy to establish a city in your back yard, as it were, from which diplomats on missions of espionage and sabotage, or military units out for conquest, can be created and dispatched.

As you can afford the commitment of settler units, set them on projects of roadbuilding, driving thoroughfares into the wild.

The roadbuilders should be accompanied or preceded by military units for protection. Try to choose routes for your roads that accomplish a couple of purposes: a) you want to create a system of roads that gives you and your military quick access to vulnerable areas; b) roads built for defensive purposes also serve the cause of expansion. With a roadway in place, leading to the best potential city sites in the wilderness, you've taken a large step toward completing the settlement of your continent. Indeed, once your defensive roadworks are completed, you can shift the settler units from roadbuilding to city construction. (Don't forget to reassign the accompanying military units to the new cities, lest they continue to be a drag on the economy of their hometowns.)

Harbor and Coastal Defenses

Fortify at least two defensive units in all of your cities, but concentrate on your harbors if facing stronger seapower. The enemy will attempt to weaken harbor defenses and population through bombardment. Above all, build city walls in your harbors. Not only do these protective fortifications help ensure the safety of the city's inhabitants, they can also give you an edge against naval bombardment. This is one point at which a weaker-but-fortified civilization stands a good chance of wreaking some havoc upon a superior enemy. You may find yourself delighted to see a harbor fortified with little stronger than city walls and a cadre of musketeers bring down a far superior battleship or cruiser.

Another approach to harbor defenses calls for a commitment of your own naval forces, with ships on sentry duty a square or two to either side of the harbor entrance. This is an expensive strategy—only the wealthiest of civilizations can well afford to tie up naval forces that could otherwise be used for exploration or transport. But it is a strategy that will help reveal the approach of enemy craft before they affect a landing or bombardment.

As your naval technology progresses and your ships are no longer shorebound, you might try placing a sentry ship offshore a square or two in hopes of detecting enemy vessels sailing in from the open sea. Again, this strategy is only worthwhile if your civilization can truly afford to commit the ships to sentry duty.

Later in the game, when your opponents have developed effective bombardment techniques, you may wish to draw some of your coastal pickets inland one square. By moving them inland they become safe from naval bombardment, but remain ready to respond to amphibious invasion. On the other hand, moving them inland frees up territory on which your opponents can land troops.

At some point you may find your harbors facing a blockade, sealed off from the sea by enemy naval units. Here is where a strong treasury can be helpful. If you have the funds—and naval technology at least equal to that of your enemy—you can purchase naval units with which to sink the blockading ships. This strategy is risky: There's the chance that you will make the investment only to have your newly purchased ship destroyed by the next round of bombardment.

Technological advances offer additional harbor protection. Don't underestimate the effectiveness of aerial defenses against sea-borne adversaries. Bombers (and occasionally, but only occasionally, fighters) can eliminate enemy vessels. An advantage of aerial responses to naval threats is that the planes can be based in cities other than the harbor itself. They can fly out to sea from inland locations and return to bases a few squares removed from the coastline. Aircraft can also serve important patrol functions, although these should not be automated. Watch the aircraft's movement allowance, and make sure you don't use it up before the plane has a chance to land—it's costly to run out of fuel in midair.

While fighters are only occasionally effective against enemy ships, they can protect your harbors from enemy bombers. If you have the technology, build a couple of fighters and base them near

the coastline where they'll be ready to respond to the approach of enemy warplanes.

The other airborne tool at your disposal, once you reach the appropriate level of technology, is the nuclear missile. Nuclear warheads, needless to say, are devastatingly effective against enemy seacraft, but they bear dreadful environmental consequences that we'll examine in a subsequent chapter.

NAVAL DEFENSES

The best way to defend your shores is by preventing enemy craft from reaching them. And you can best do that with your own naval vessels. Your initial seafaring units will be used for exploration; later ones for colonial expansion and wars of conquest. But as you can afford to, or if you find yourself facing seaborne threats, you will want to put some of your naval production to defensive purposes.

Harbors and areas of naval opportunity will be your first choices for naval defenses. Indeed, those channels you once defended with ground-based pickets can now be sealed with ships on sentry.

As your picket ships become more capable, use them in different defensive ways. Cruisers, battleships, and submarines, for example, being equipped with radar that reveals the occupants of squares beyond their own, can serve patrol duties as well as picket posts.

Use your picket ships wisely, determining their response to other vessels by the nature of those other ships. If a trireme encounters a battleship, for example, there's not much you can do but retreat. On the other hand, you may encounter unarmed craft laden with colonists or troops. Try to sink these cargo vessels: You can severely crimp an enemy's plans by sinking a frigate or transport bearing an invasive, diplomatic, or colonial force.

Once you've encountered another seafaring power, do your best to follow its course back to its home landmass. Those earliest vessels you encounter will probably be triremes, hugging the shore as closely as your own ships. Not only will you get a better sense of what sort of force you're up against, you'll also open up new areas of the world for your own expansion.

When attempting to trace a route to another civilization's home, consider loading your vessels with diplomats and caravans, if you're able to produce those units. By doing so you increase the chances of getting a picture of your opponents via the diplomats and earning income from trade by way of your caravans.

Either way, once you've made contact with another seafaring civilization, do everything you can to place units on picket along the routes likeliest to be taken by your opponent. Do what you can to decrease the possibility of surprise invasions or amphibious landings.

Obviously, naval forces can be placed on patrol just as ground forces can. Use the go-to key, plot your ship's course, sit back and let the computer navigator do the work. You'll be notified when your ship has completed its voyage—or when it encounters enemy vessels.

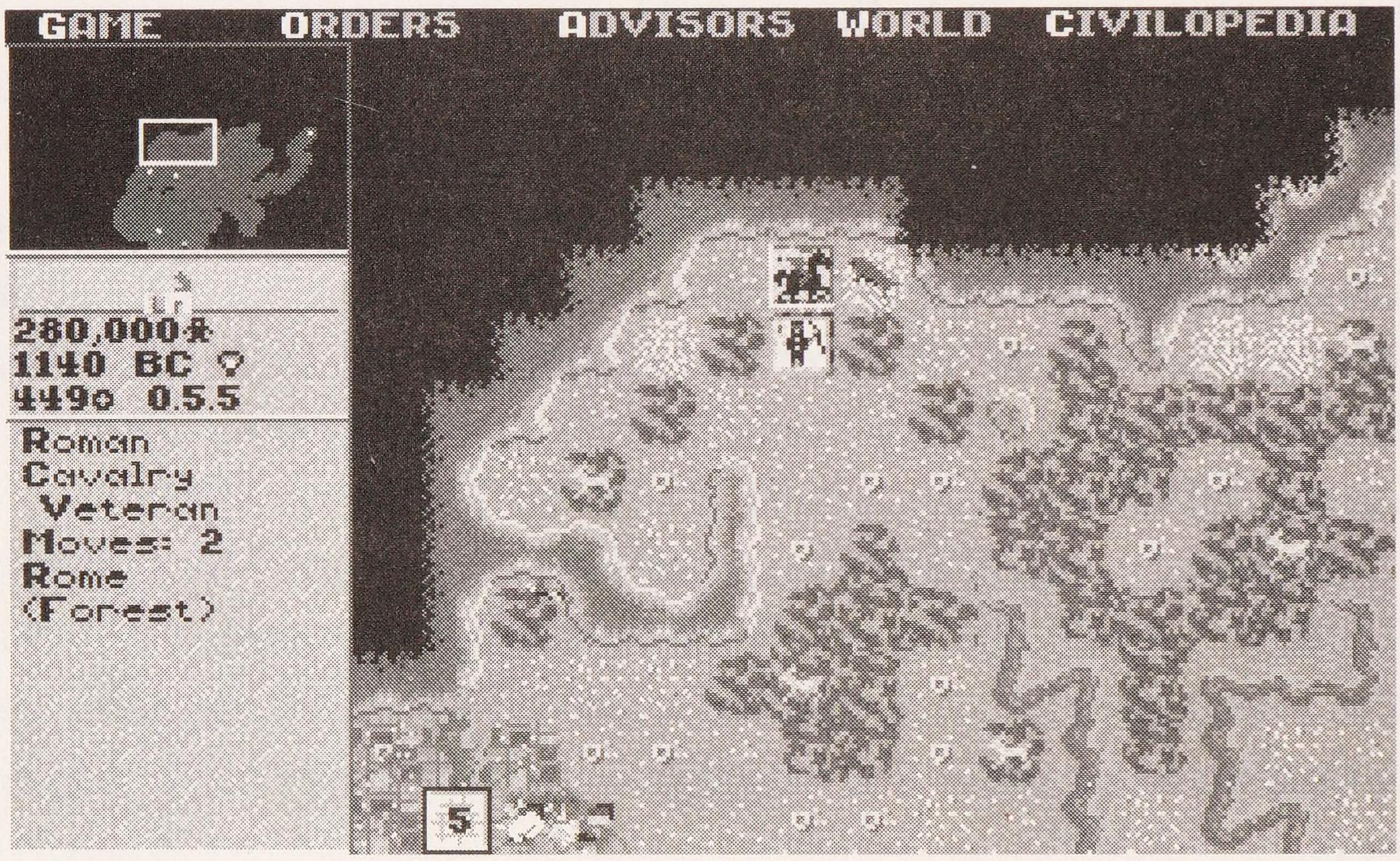
KNOW YOUR ENEMIES

So far we've looked at defenses that take advantage of your intelligence as a general, your ability to marshal and maneuver your military resources. Now we'll look at the intelligence resources within the game itself. The diplomat unit, in particular, can be employed to great defensive benefit.

In the beginning, diplomats serve to provide information about your closest neighbors. This takes the form of establishing embassies which let you "see" into the heart of neighboring empires. The information you derive from your embassies will help

you decide whether an international relationship will be defensive, offensive, or based on commerce and treaty.

At first, as you encounter other tribes during your explorations, you should probably accept any offers of treaty that are proffered. There are a couple of advantages to this. First, you buy some time before having to put yourself on a war footing. Especially in the early stages of the game this time can be vital to your success.



Consider striking treaties with neighboring civilizations. They are then unable to intrude on your turf. In the right circumstances, a single militia unit can hold a more powerful enemy in check.

Second, by striking a treaty, you have the opportunity to seal off your neighbors from your territory. Under treaties, tribes are prevented from intruding upon their neighbor's territory. By careful placement of fortified units, you can contain the other tribe within a proscribed area. Those fortified units, by the way, need not be your most advanced or expensive: Militia units under fortification serves just as well as legions or chariots in holding treaty-bound neighbors in check. A wise ruler, though, will back up her or his fortified units with stronger military units on sentry

duty, just in case your neighbor decides to violate the treaty with a sneak attack.

Be alert as well for "holes" in your defensive line. If neighboring tribes manage to "sneak" through and establish a presence on your turf, you'll be faced with the same treaty-imposed movement restrictions that should have held them in check. Then it's up to you to decide whether to violate the treaty with a sneak attack of your own. Be on guard as well for sea-borne attempts to subvert your territory.

If your treaty holds, and you manage to contain your neighbors, a good move is to create a diplomat unit, should you have the necessary civilization advances required to do so. This unit can then be sent through the treaty lines to establish an embassy and get a clear picture of your neighbors. Embassy information varies with the different difficulty levels of the game, but an embassy always gives you a sense of who and what you're up against, information that can prove crucial to your long-term strategy.

Even if you discover that you possess overwhelming superiority in relation to your neighbors, you may not wish to crush them. For one thing, a military campaign requires a commitment of resources that might best be put to other purposes. Perhaps more important, that neighboring city can serve as a source of income for your civilization. So long as you are under treaty, your caravans can cross the border and establish trade routes with your neighbor's cities.

SIEGE-PROOFING

In 73 A.D., in a fortress perched 1,300 feet above the floor of the Judean desert, a garrison consisting of fewer than 1,000 Zealots—men, women, and children—withstood two years' siege mounted by the Tenth Roman Legion, 15,000 strong. The fortress was called Masada, and the epic story of its besiegement (the surviving

members of the garrison finally committed mass suicide rather than fall to the Romans) remains legendary to this day.

In *Civilization,* you can't really make yourself siege-proof, but there are a number of steps you can take to make successful siege of your cities more difficult. The lesson of Masada can serve you well. The Zealot garrison was fortified, commanded the high ground, and benefited from the fact the Roman supply lines were long and ran through arduous territory. The more difficulty you impose upon your enemies, the more time you buy to respond forcefully to the attempted siege and, with luck and skill, repel it.

The first step, naturally, consists of shoring up the defenses of each city you establish, and shoring them up as quickly as you can. As we've seen, the initial phase of this rests upon building a garrison of at least two fortified militia units.

This is an initial step only! Two—or even four—primitive units do not possess the strength to withstand a concerted assault by an enemy possessing legions, chariots, or more advanced military units.

Augment or replace your fortified militia with additional units of superior defensive value as soon as these units can be produced.

(Look sharp: Sometimes you'll find that you develop a technology such as bronze- or iron-working while your cities are in the midst of producing units based on more primitive technologies. Remember that resources accruing toward the purchase of one type of unit can be shifted toward the production of another type. Upgrade units in production as soon as the upgrade becomes available to you. Do so every chance you get, and you won't waste time and turns generating units that are less helpful to you than they could be.)

If you can build city walls, do so. These triple the defensive factors of units within the city. Another advantage of defending cities is that your military garrison is reduced by only a single unit at a time when the city is under assault, no matter how many units

are stacked in the city. Units stacked outside of cities can all be destroyed by a single enemy unit on the attack.

THE INVADERS APPROACH

Despite your best efforts, the enemy has made a landing on your territory, or breached your borders if you're already sharing the same landmass. They are moving in strength toward your cities, and they possess military technology superior to your own. What can you do?

One thing you might do is consider the example of Roman General Quintus Fabius Maximus.

Fabius, as he was known, harried Hannibal, whose Carthaginian armies had wreaked havoc throughout Italy a bit more than 200 years B.C. A brilliant battlefield strategist, Hannibal's domination of combat encounters led Fabius to develop a strategy of his own, one based on avoiding direct confrontation with the Carthaginians. Instead, Fabius struck quick blows at Hannibal's flanks, inflicting what damage he could before darting away.

The same approach can work for you if you're careful. Use the most mobile of your units, and watch their movement points closely. Try to position your forces in such a way as to let you strike and retreat. If that's not possible, use your less capable units as distractions, drawing the brunt of the enemy assault. Then strike with your stronger units.

Above all, always strike stacked units first. A single attack can thus take out two or more of the enemy at a time!

Fabian tactics ultimately are diversionary. Sooner or later you may have to face the enemy on open field of battle—or from behind city walls. The benefit of a Fabian approach, though, is that very diversion. It buys you time to shore up your city defenses, create new military units, and generally prepare for the larger confrontation to come.

(You might bear in mind as well the thought that it was another Roman general—Publius Cornelius Scipio—who finally drew the Carthaginians out of Italy. Scipio did so by the boldest of maneuvers: He led an invading army of his own into Africa and laid siege to Carthage itself. Study your information about your enemy, and if you have the opportunity and resources, think about invading their territory and tying them up at home. Sometimes offense is the best defense.)

ECONOMIC DEFENSES

Money may not buy happiness, but it can help purchase security. Financial defenses can protect against both internal and external threats.

Against external threats, your economy serves several purposes. A healthy treasury enables you to purchase military units in a pinch, creating reinforcements almost instantly rather than waiting for them to be created by accrual of resources.

On the home front, a strong economy helps ensure productive workers, eager to do their best for the war effort. (This, of course, assumes that your people are supportive of your military plans, and of your government itself.) A productive populace can change on a dime, as it were, pumping out military units or city improvements as circumstance permits.

On the other hand, a dwindling treasury, an economy that spends more than it takes in (sound familiar?) may force you to sell off city improvements or disband military units at crucial points in the game. Selling those city improvements offers only temporary relief from your crisis: You get an immediate infusion of cash, but your citizenry must endure the loss of improvements that contribute to the quality of their lives, increasing the likelihood of growing unrest among your citizens.

There are several solid approaches to building a successful economy. Most of these will be examined in greater detail in a

subsequent chapter; for now, we'll focus on economics as an aspect of civilization defense.

The first step you can take is to exploit fully the productive capacity of each of your cities. Examine the terrain around the cities and undertake the appropriate technology, whether mining, irrigation, or simply building a road.

Even more effective is the caravan unit, made possible by the currency and trade advances. Your caravans are your main source of external income as they reach the cities of other civilizations and establish trade routes with them.

On a purely defensive level, caravans serve as a good source of information. You can deposit a caravan or two on the shores of an island or continent controlled by another civilization, and use your caravans to explore the interior of that landmass, revealing the location of cities, placement of troops, and so on. While your caravans won't give you the detailed portrait of other civilizations' cities that a diplomat unit can generate, they *will* reveal the size and wealth—as represented by the numeral emblazoned on each city square—of your opponents' cities.

(You should strike trade routes, by the way, with the largest and most powerful cities in other civilizations. These are the routes that will generate the largest income for your own economy.)

Finally, you can use diplomatic units to bribe enemy units to join your civilization. This is costly, but can help avert a rout if you can afford it. Especially effective is bribing enemy units of greater technology than your own. This gives you the opportunity to turn, as it were, the enemy's own guns against them.

CIVILIZATION KEY

Monitor your treasury when under assault from outside. A good working knowledge of your economy's strengths and weaknesses can guide you in your response to enemy pressure. Hard though it may be to swallow, there are times when it can pay you to pay off the enemy in the form of tribute, strike a treaty, and devote yourself to rebuilding your resources. The alternative may be annihilation.

TECHNOLOGICAL DEFENSES

Among many other things, *Sid Meier's Civilization* is about technology and the impact of technology on civilization. Naturally, then, technology plays a large part in the defenses you erect. Selecting the right technological paths to pursue as you climb civilization's ladder can make or break your defensive capabilities.

Obviously, at the outset of the game you should focus your attention on fundamentals: Metalworking, masonry, and the creation of barracks units all are essential to the erection of effective defenses against attack.

The decisions become more difficult as your civilization grows. Military technology cannot always take precedence over social and cultural civilization advances.

That in mind, there are a few general principles that can help you ensure that your defensive technology is adequate to the tasks it will face.

1. Always buy the best. It doesn't do you any good to possess musketeers if your cities are still defended by phalanxes. Upgrade often and thoroughly, starting with your barracks installations. These will require replacement upon the achievement of certain civilization advances at certain levels

of the game. In hot and heavy combat, units not produced by barracks facilities stand little chance of survival.

2. Push the technology to its defensive limits. If your civilization is capable of producing frigates or ironclads, you have the freedom to move offshore. Don't trap these powerful units in your harbors or at shore where they can be destroyed by bombardment. Put them to sea where they stand a chance of sinking the enemy on approach. The same holds true for aircraft and other highly mobile pieces. Stationary positioning is not always the optimum defensive strategy: Remember the Maginot Line.
3. *Use* your intelligence-gathering capabilities. Your diplomats can keep you informed of other civilizations' technological capabilities, giving you at least the possibility of adjusting your own pursuits in hopes of achieving parity or maintaining superiority. Don't let other civilizations guide the development of your own; but do put your understanding of your adversaries to work for your own advantage.

   All's fair, as they say: You can also use your diplomats to *steal* technology from your more advanced enemies. To do this, you must, of course, smuggle a diplomat unit through enemy lines and into an enemy city. Nor do you get to choose the technology you steal. It's tough and risky, but technology transfer—from them to you, at any rate—can make a difference in the course of a war.

   (If you're not at war with the civilization you wish to steal from, you soon will be: The act of stealing constitutes an act of war, as well as breaching any treaty that may exist between your civilizations.)
4. Acquire technology through offense, if possible. Even though an enemy civilization may outnumber you and possess superior technology, you may have a chance to acquire some of their technology through conquest. Send expeditionary forces

to the peripheries of the other civilization, looking for newly established cities whose defenses are weak. If you can capture an enemy city, you'll have a chance to capture one of their technological advances as well.

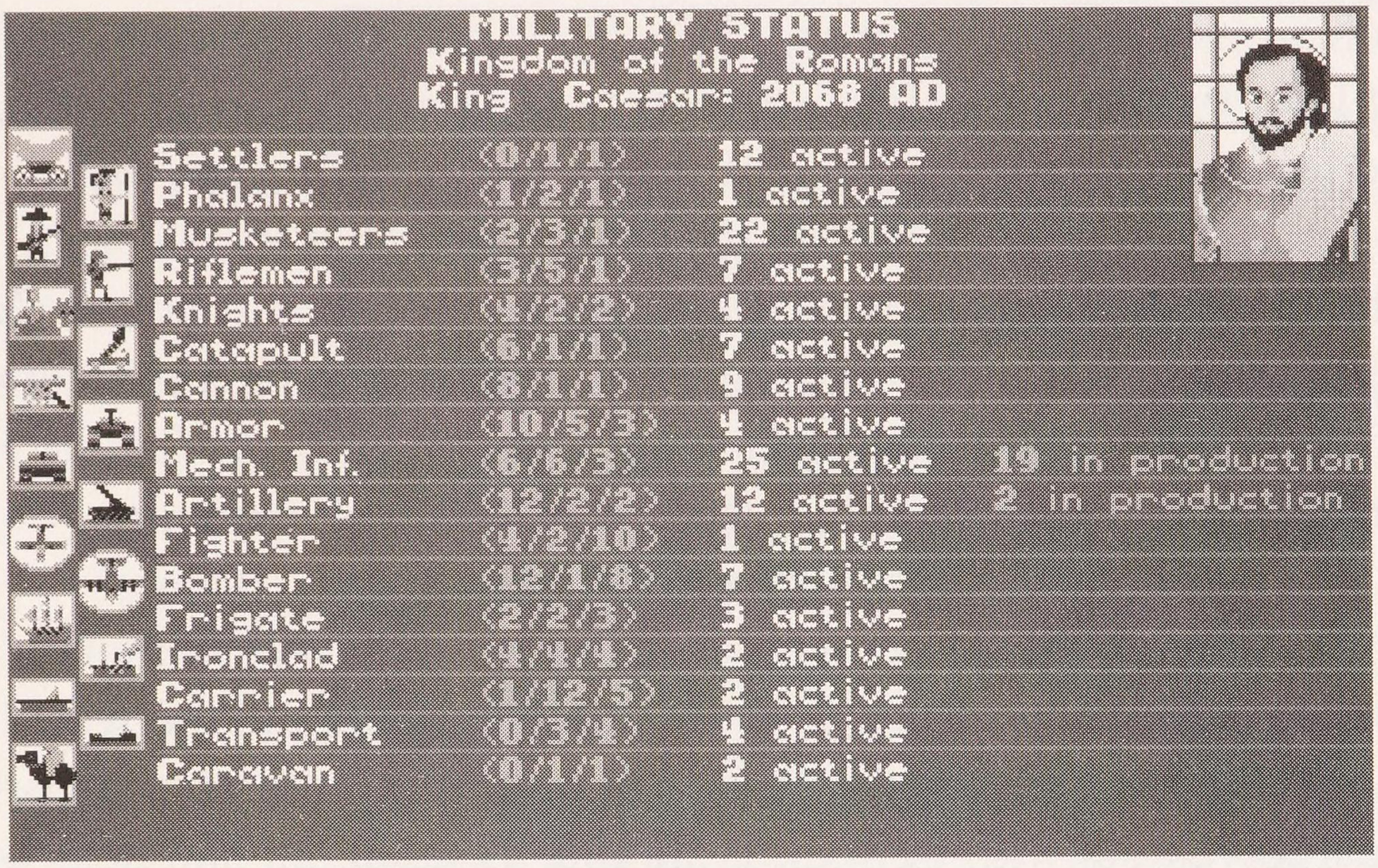
(You can accomplish the same goals closer to home, if the enemy has captured one of *your* cities. Take it back—and with it get some of their knowledge.)

5. Pursue civilization advances and Wonders of the World that can help give you a defensive advantage. In the ancient portion of the game, such an advantage is lent by the Great Library Wonder, which makes available to you any advance possessed by at least two other civilizations. This is a good hedge against being too quickly outstripped by opposing nations.

   In the nuclear age, you'll want to place an SDI defensive unit in your capital city at least, and should consider locating one in each of your leading cities. This is the only effective defense against the devastations of a nuclear attack.

   Ownership of the United Nations is the best defense of all. If your civilization possesses the United Nations, *all* other nations must make peace with you, no matter how superior or powerful they might be.

6. Invest in a solid educational infrastructure, enhancing it at every available opportunity. A sizable investment in and commitment to education—in the form of universal literacy, a good university system, and knowledge-oriented civilization advances and Wonders—increases the rapidity with which your wise people can achieve breakthroughs and advances. These, in turn, increase the likelihood of your being able to mount a technologically sound defense.



Consult your advisors for at-a-glance looks at the state of your far-flung forces.

FAR-FLUNG DEFENSES

As your civilization spreads across its home landmass and onto others, the majority of your attention may be focused upon the vicissitudes of conquest and colonization. Don't neglect the defensive side of the game. Don't make the mistake of concentrating the majority of your forces on the leading edge of your empire to the detriment of your civilization's core. More than one civilization has fallen from weakness at home despite great strength on its outer edges. Upgrade your city fortifications at every reasonable opportunity. Disband outmoded units, freeing resources for the creation and support of units more suited to contemporary needs.

At the same time, it's foolish to continue devoting time, resources, and money to over-fortifying cities located far from the front. As in so many aspects of this game, you must strike a reasonable balance.

First let's focus on the outer limits of your civilization. On those edges, place garrisons ready to protect your interests. Even a strong, world-girdling empire will have points of vulnerability at

which ambitious enemies can strike. Your garrisons should consist of at least two strong defensive units, just as your cities at home. In addition, new cities on distant shores can benefit from the presence of a couple of strong offensive units, able to deal with approaching attackers or barbarians. Remember that as you settle new and untamed lands barbarians will continue to be a problem.

As quickly as possible you should erect a barracks facility in order to reinforce further your settlement with veteran units.

You will need to establish and defend effective lines of supply, carrying reinforcements from your productive homeland to the more tenuous locations you're establishing around the world. Guard these resupply routes as well as you can, preferably escorting cargo vessels with military craft able to scout out and deal with the ships of your adversaries. Set yourself a regular schedule of resupply and reinforcement, building your garrison until it is well fortified and defended.

Second, bear in mind the lessons you learned when building your first cities. As you produce more military units—or as additional reinforcements arrive from home—you'll want to put into place a strong line of pickets and sentries, establishing a protective zone around your new city. As the city develops, producing settlers who will develop and exploit the local resources, continue moving the picket lines outward, adding to them to eliminate any holes through which the enemy might slip.

Third, use your new city to produce a diplomat or two, especially if the newly created community lies on a landmass containing other civilizations. The diplomats can give you a picture of the size and nature of enemy cities and defenses, information that will assist you in defending your own new community.

CIVILIZATION KEY

The cities on the periphery of your civilization should be well protected, as they are the cities most typically exposed to external threats. As the boundaries of your civilization expand, focus your defensive efforts on the outer edges, shifting the cities of your heartland—which should be farthest from the enemy's reach—to producing civilization advances and Wonders of the World.

Bear in mind, though, that it's unwise to let your guard down too far, no matter how distant a city lies from lines of conflict. This is especially true of your capitol city, although other cities as well can be left vulnerable to sabotage and espionage on the part of enemy diplomats.

Finally, bear in mind that your purpose is expansion, yet, since you're in a defensive mode, you want to be careful that your expansionist movements are not interpreted as threats by other civilizations. If you establish a treaty, try sticking to it for awhile as you build your military and economic resources in the new location. Far-flung colonies are vulnerable to assault and takeover. Your job is to protect them until they're strong enough to withstand enemy threats.

For all the vital importance of a good defense, at home and abroad, it's tough to win at *Sid Meier's Civilization* by staying home, tending your walls and fortifications, and minding your own business. Isolationism will, ultimately, cost your society more than it gains. You must at some point take a more aggressive approach, at least against some of the other civilizations on your world. Conflict can be delayed, but not avoided: Other civilizations will ultimately move against you.

Chapter 5

In the next chapter we'll see exactly how you can prepare yourself and your civilization to go to war, and look at ways to increase your chances of victory.

Chapter 6

Taking Offense

Chapter 6

Taking Offense

Civilization provides you with more than enough tools to take a grand offensive approach, mounting, in effect, a plan of global conflict and—with luck—conquest.

Here your decisions should be shaped by your goals. Decide whether you want to conquer the entire world, eliminating all opposition, or whether you wish simply (not that it will necessarily be simple!) to drive other civilizations from your homeland and prevent them from returning to conquer you.

Whichever approach you take, you must at every step maximize your offensive production and strategic planning, building armies, lifting your level of military technology, structuring your government to increase the willingness of your people to fight.

Your decision will affect as well the paths you follow toward advanced technologies, city improvements, and Wonders of the World.

Offensive Exploration

Again, exploration plays a large part in your plans and the accomplishment of your goals. Early on—during the first turn, if possible—you should establish a city on a seacoast. (If you haven't found the sea within three turns, go ahead and put down your roots. Time is precious, and those first three turns represent six decades of building for your opponents. You can always go to sea from a city built subsequently; but make sure your second city lies on the edge of the ocean.)

At the early stages of your civilization's growth, offense should come second. Secure your home before setting out to conquer. As noted in the previous chapter, a strong defense is the best possible preparation for an effective offensive strategy.

But be prepared to take advantage of offensive opportunity when it knocks. As you explore your home territory, you may encounter a tribe less advanced than your own. If possible, isolate or eliminate them. Although few civilizations ever disappear completely from *Civilization* after being destroyed, the interruption in growth that destruction causes can be of great benefit to your own development. You have one less opponent to worry about—at least for awhile.

A persuasive case can be made, however, for isolating the other tribe rather than completely eliminating it. As your civilization progresses, its maintenance and expansion become progressively more expensive. Funding your civilization requires income, not all of which can be generated within your own borders. You need trading partners, and the most effective—and lucrative!—partners are cities in other civilizations. By eliminating too completely those other cultures, you may ultimately be cutting your own throat economically.

How, then, to encapsulate other civilizations in order to trade with them but also to minimize the possibility of their aggression aimed at you? There are several ways.

Easiest, perhaps, is to establish a treaty with the other nation. You should be guided in this by the other civilization's proximity to your own.

Which brings us back to the careful exploration of your starting landmass. As quickly as possible after establishing your first city, send units out to explore the land on which you've been placed. As you explore, keep an eye out for several things:

1. Look for areas where the land narrows, such as an isthmus, and which can easily be sealed off should there be other civilizations beyond the narrows.
2. As your units travel around the coastline, look for the northernmost and southernmost points of land. These are also likely spots to detect the arrival of ships from other civilizations, making their own way around the world by following the polar coastlines. (It is from these spots as well that you might try dispatching triremes in hopes of making a landfall before becoming lost at sea.)
3. Be alert for different types of terrain, especially as you push farther from your home city. Terrain can impede the progress of your more mobile units; you'll want to map out the most easily traversed routes to areas where you encounter other civilizations.
4. Try to dispatch explorers in sufficient force as to allow the posting of sentries and pickets around the perimeter of your expanding civilization. These will help keep to a minimum the appearances of barbarian raiders, who arise in wilderness areas. Your job is to seek out and conquer other civilizations, not waste time and resources doing combat with barbarians.

In some ways, your job as the leader of civilization is made easier if your initial location is a huge continent. You have at hand room for expansion, opportunities for trade and exchanges of information with other civilizations located there, and you are

freed, at least for awhile, from the necessity of developing seagoing capabilities.

Island Homes

Suppose you're on an island, rather than a continent. Your first actions should be to complete the exploration of your landmass, with an eye toward appropriate locations for your cities. You'll need several cities from which to launch your campaign of conquest, and at least two of those cities must be seaports, from which ships can be sent forth. Position your cities carefully, ensuring that each is as productive as possible. Begin producing triremes as early as you can, dispatching them to the far corners of the globe in search of other civilizations.

Don't send out empty ships. Even though an unloaded vessel can explore the world, and locate other islands and continents, all you'll be able to find are the coasts of these neighboring lands. Their interiors will be denied to you unless your ships are carrying units which can be debarked for exploration.

Again, speed is of the essence. If you are able to produce cavalry or chariot units, those are what should be loaded onto your ships. The extra mobility of these units will enable you more quickly to travel the interiors. This gives you the opportunity to locate other civilizations, scout out the lay of their land, and also to liberate any serendipity squares—scrolls of wisdom, mineral deposits, and so on—as yet uncaptured by others.

Another good approach at this stage of the game is to include a band of settlers on your exploration vessels. If your initial location is an island, you will quickly need additional lands to colonize and develop. Settlers can do this. Don't forget, as you establish your new cities, to reassign any traveling units—and your trireme, if you locate the new city on a seacoast—to the new cities. This will relieve some of the pressure on the communities on your initial island.

CIVILIZATION KEY

Don't neglect the interiors of continents and islands your exploration craft discover. To explore those interiors you'll need to carry land units which will be debarked on foreign shores.

The choice of which land units to send on exploration journeys will vary depending upon your overall strategy, but diplomats and settlers can both be effective explorers.

Because wild and unexplored lands are fertile breeding grounds for barbarians, you should also include a military unit among your explorers.

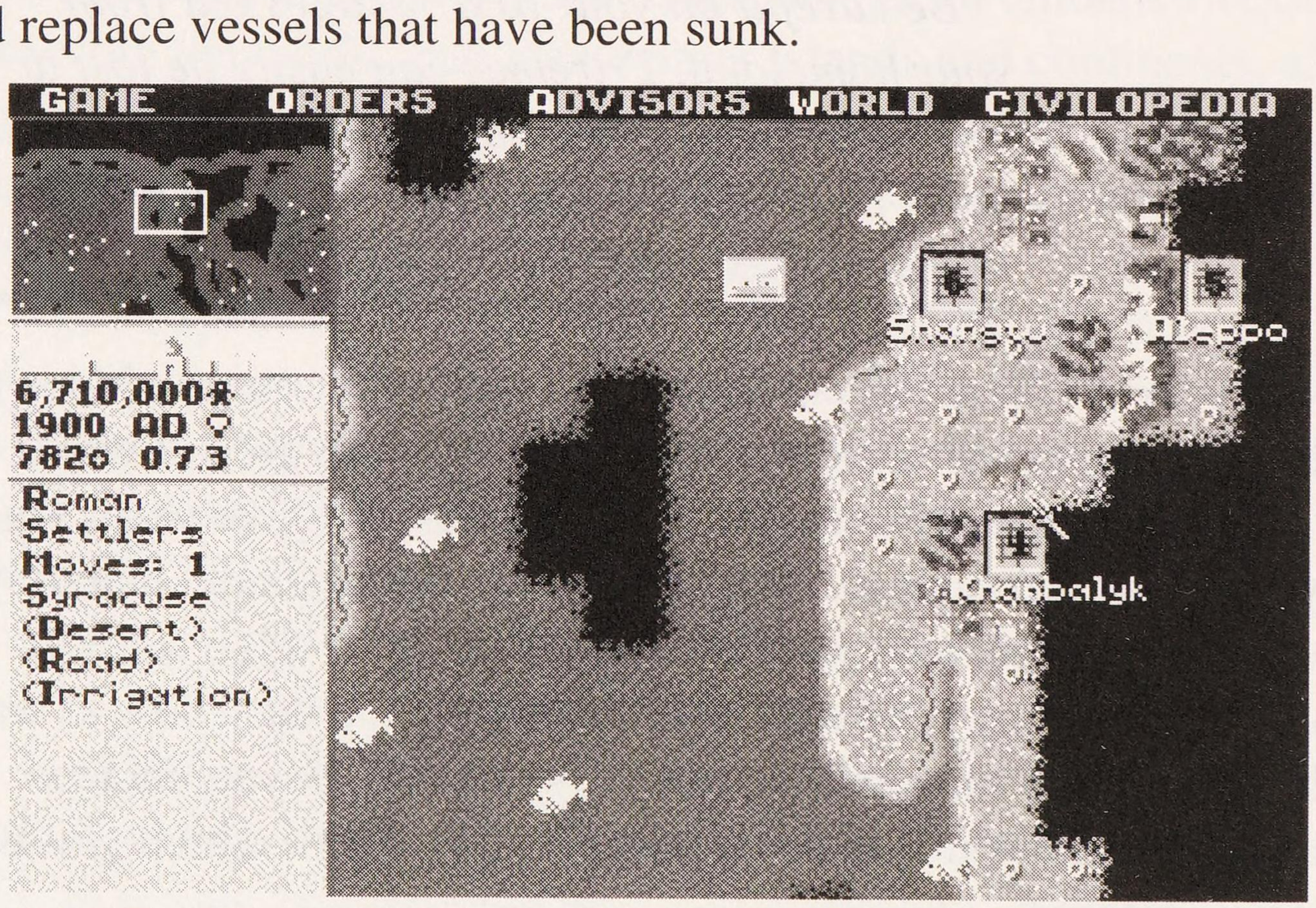
Be careful on your first voyages out from your homeland. Triremes can easily be lost at sea, so it's a wise idea to find a navigable path between landmasses before sending out ships laden with expensive units.

If your civilization has developed writing, it's a good idea to build some diplomat units and send them into the greater world as well. Using diplomats to establish embassies will give you a leg up on your plan of conquest. At certain levels of the game, embassy intelligence reports let you know the size of your adversaries' treasury and military, as well as keep you posted on who's at war with whom. This information can prove crucial as you decide which opponent you'll make war against, and with which you will negotiate treaties.

Chokepoints and Blockades

Another advantage of seafaring ability is the capacity it provides for establishing and enforcing blockades. As you sail around the world, you'll discover various chokepoints, through which other sailors must come to find your own civilization. Position a trireme at each chokepoint possible, sealing the straits against enemy vessels. Put your ship on sentry duty; this way it will come to "life" when another ship contacts it.

When your sentry ship wakes up, attack the other ship. There's a good chance you will sink it, and send to the bottom of the sea any units it is carrying. Not always—there will be times when it's your own vessel that goes down! For that reason, it's not a bad idea to keep at sea as many ships as you can reasonably support, giving you the ability to back up your forward pickets, and replace vessels that have been sunk.



Ships on sentry duty outside enemy harbors can give you an important edge. Your warship will come to life when contacted by an enemy vessel. This is a good way to hamper enemy convoys or invasion fleets.

Sealing off chokepoints is only a first step in establishing naval superiority. As you sail around the coastlines of distant landmasses, you'll encounter enemy ports. The advantages you can

derive from these harbors are both strategic and information-oriented. Your contact with an enemy port provides you with a sense of the strength of that city, letting you know at a glance whether or not enemy ports are stronger than your own.

THE LESSONS OF HISTORY

Blockades and chokepoints have proved crucial throughout history. Consider one of the most dramatic examples of modern naval warfare: Trafalgar.

Outnumbered and outgunned, Lord Nelson's British fleet kept careful watch over Napoleon's marshalling of French and Spanish vessels. Nelson understood the value of biding his time, and did so for months, until, on the 21st of October 1805, he engaged the enemy in waters near Gibraltar, offshore from Cape Trafalgar. In little more than four hours, two-thirds of Napoleon's fleet was destroyed or captured, while Nelson, although fatally wounded during the battle, did not lose a single ship. The course of history was from that moment changed: Napoleon ceased to be able to threaten an invasion of England, and his ambitions were confined to the European continent.

What makes Nelson's accomplishment all the more remarkable is that Nelson spent a full two years setting up his naval trap. During that time, squadrons composed of ships from the British fleet hugged the enemy coastline, alert for any enemy movement into or out of harbors. The strategy effectively prevented Napoleon from assembling a large invasion fleet.

The wise leader of a civilization understands the value of catching the enemy at sea—and destroying him there. Be patient, and let the enemy make the first move.

Strategically, of course, the advantages are obvious. You know where at least part of the other civilization's seafaring capacity lies. That knowledge can prove crucial to your plan of conquest.

If you can support sufficient ships, it's worth trying to blockade the enemy ports. Keep your adversary's vessels pinned at home and you'll win an important advantage when the time comes to mount an amphibious assault and lay siege to their lands. You can also interdict their own shipping before it has a chance to get too far from home.

Position a ship a square or two back from the port. Place the ship on sentry duty and wait for ships emerging from port.

Bear in mind, if your sentry ship lies "at anchor" touching the shoreline, that enemy land units passing by your position will also wake up your ships, letting the enemy know you're there. There's little to be done about this; it comes with the territory.

A successful blockade generally requires two ships per enemy port—this is expensive, and will put pressure on your own home bases. The expense is worth it if you can halt the enemy's own plans for offshore expansion. The advantage of having two ships bracketing the enemy port is the backup it offers. Not every ship-to-ship battle will go well for you. Should you lose your initial vessel, your backup ship can endeavor to track down the enemy craft and sink it. (You'll have to wake up the other ship manually, unless the enemy comes in contact with it. Don't put this off, lest you forget and your movement turn comes to a close while your sentry ship remains somnolent.)

When you make that initial contact and your primary vessel returns to duty, the best approach is to go ahead and "awaken" your backup craft. That way, should you lose the first ship, your next unit will be awake and ready for action. You won't have to cycle back through the map to awaken the other ship.

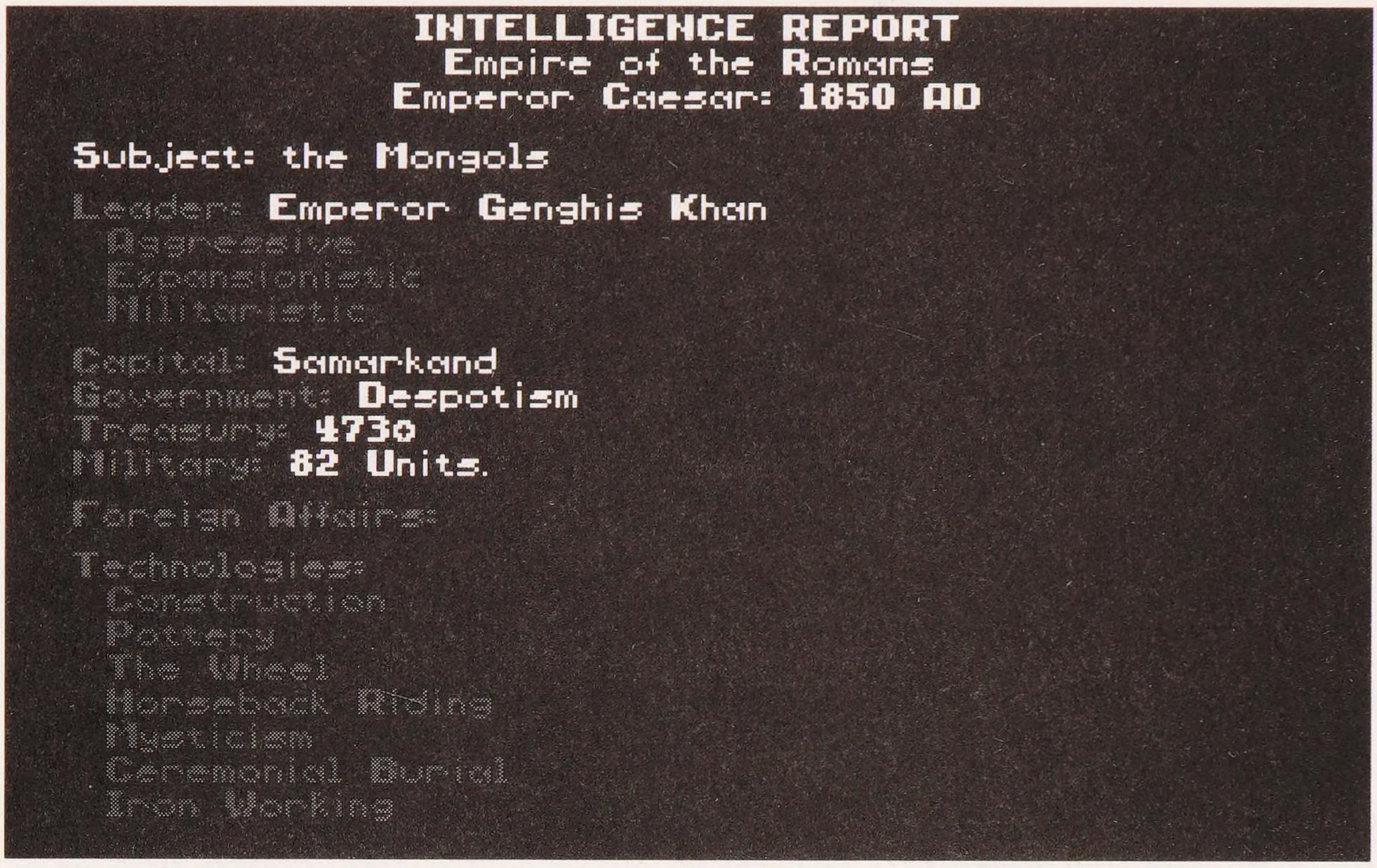
Diplomatic Cargo

As you locate other civilizations, think about how you will approach making war on them. Effective thinking requires accurate information, and the unit best equipped to give you information is the diplomat. But there is more to using your diplomat units than just establishing embassies. Indeed, the diplomat can be the most effective of all your units for laying the groundwork for a successful invasion or siege.

For that reason, it's wise to include a couple of diplomat units on each vessel you send out. (If dispatching triremes, two units will be all each ship can carry.) Debark the diplomats before putting the ship in position to establish blockade: There's no point in risking your diplomats to the dangers of sea battle or having them lie idle during the turns when the ship is simply on sentry duty.

When a diplomat unit comes into contact with an enemy city, your first move should be to establish an embassy. Your embassy will generate information about the enemy for as long as the embassy exists. After that, each subsequent diplomatic contact offers you several choices.

As we've seen, any unit touching an enemy city gives you a picture of that city's numerical strength. But only a diplomat can breach the city's barriers and deliver a picture of the city's particulars—defense, inhabitants, structures. This sort of information is beyond price when planning a campaign or laying siege. Choose Investigate City from your diplomat's menu to take advantage of this capability.



Information obtained by your diplomats and embassies can help you decide what course of action to pursue.

Sometimes your opponents will be more technologically advanced than you. You'll know this from your initial embassy reports and from subsequent missives sent back from your embassies. Again, your diplomats can prove invaluable. By learning which technologies and advances your enemy possesses, you can, if need be, reshape your own intellectual pursuits in hopes of catching up to or exceeding their abilities.

You can also seek to exchange technology with other tribes, although you'll be surrendering some of your own hard-won knowledge in exchange for theirs.

But there's another option. Your diplomats can steal technology from your opponents. This is a risky maneuver, involving the gaining of clandestine passage through enemy lines and penetrating an enemy city. The risks may be worth it if you gather the knowledge you need, and can put it to work at the construction of units that will be a battlefield match for the enemy.

You can steal technology from allies as well, although you should be aware that this constitutes an act of war, canceling your treaties.

CIVILIZATION KEY

Get an idea of the enemy's technology level before making war. To do this, you'll need to establish an embassy in an enemy city.

If the enemy is more technologically advanced than you, you might consider postponing your aggression until you are more evenly matched.

Catch up with the enemy in the technology race through one of four ways:

1. *Undertake concentrated research efforts, building libraries and universities in your cities if you are able, and devoting a larger portion of your revenues to scientific research.*
2. *Exchange technologies with friendly civilizations.*
3. *Build the Great Library Wonder; any time two other civilizations obtain the same advance, it becomes yours as well.*
4. *Steal the technology by way of diplomat units.*

In addition to stealing information, diplomats can assume the role of saboteur, aiming their efforts at units

Finally, your diplomats can sow dissent among the enemy population, causing productivity to decline and unhappiness to increase. This "psychological" warfare can be an effective tool when used against a government whose hold over its people is already shaky.

Use your diplomats wisely, but don't be overcautious. You are making war, and there will come—all too quickly!—a time when cloak-and-dagger missions are not enough. There will come

a time when you must commit your military forces to assault and siege.

The War Begins

You know where the enemy is. His front lines are half a dozen squares removed from yours; you share a continent. You have established an embassy which gives you the big picture. Advance spies—diplomat units visiting each of the enemy's major cities—have let you know which cities are best and least defended. It's time to launch your campaign . . .

There's little to compare with the anticipation that precedes the launch of an invasion. Don't let your excitement get the better of you: Successful invasions are most easily accomplished when they rest upon a foundation of thorough preparation and planning.

It may be that the early stages of your invasion go smoothly. This is likeliest to happen when you strike quickly, on more than one front, with units that are stronger than the enemy and which are gathered in greater numbers.

Even if you possess overwhelming superiority, there are some general principles to bear in mind.

Try not to stack attacking units. Doing so simply gives the enemy the opportunity to dispose of two or more of your pieces at a single blow. Even the largest of armies cannot long afford to support this sort of profligate waste of manpower and materiel. Be on guard for terrain that forces you to stack units. These natural "funnels" serve to create "killing fields" in which your troops can easily be mowed down.

Bear in mind that you don't have to attack *every* enemy unit on the continent. Especially if you have struck a treaty with another civilization, there is the possibility that your adversary will have erected picket and sentry lines to mark the border between your territory and his. If you can go around these pickets, you stand a chance of delivering a larger force to the enemy city intact;

when you capture the pickets' home city, those units will be disbanded for lack of support and will disappear from the screen.

Use *all* the resources you have at hand. Even though you have a direct land route into enemy territory, it may be advisable to send some of your invading force by sea. That way you can circumvent enemy lines, perhaps capturing a powerful city deep in enemy country. From that position, you might well be able to split the enemy, producing new units with which to solidify your holdings and expand them.

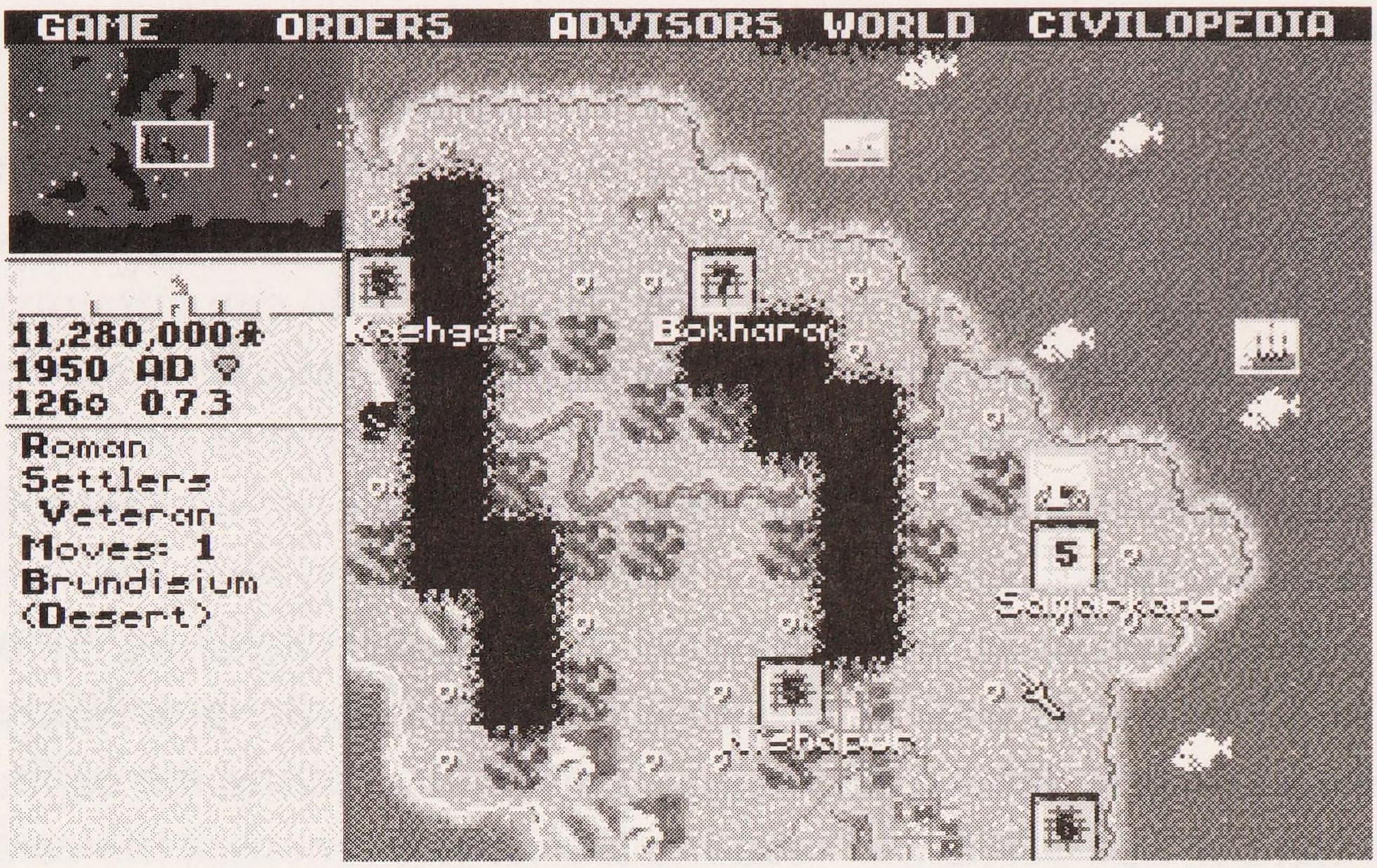
You can also acquire advances by way of conquering enemy cities. Consider as well, if geography cooperates, the possibility of striking an early blow at the enemy capitol. By taking the capitol, you have the possibility of creating a civil war amongst the enemy population. You can then strike an alliance with one group while keeping military pressure on the other.

LAYING SIEGE

Whichever approach you undertake—direct assault through the perimeter of enemy territory, or deep penetration into his heartland—you will eventually face the need to lay siege to an enemy city. Recall that one truism of military history is that sieges are often as harsh an experience for the attacker as for the besieged.

Study the city you wish to assault. What are its fortifications? Does it boast city walls? How substantial is the garrison inside the city? What are your best approaches to its attack?

Look as well at how the enemy has exploited the land and resources surrounding the city. You might wish to consider a "scorched-earth" policy aimed at depriving the city's citizenry of food and income. You can do this by destroying any terrain improvements on which your military units are located. The downside of this approach is obvious: Once the city becomes yours, you'll have to assign a settler unit to rebuild the farms and mines you obliterated.



Transport settlers along with invasion forces. The settlers can improve the production of captured cities, giving you additional military units with which to hold the city.

(Settler units should be part of your assault force anyway. They serve the purpose of engineers during your campaign, building roads, field fortifications where necessary, and, of course, increasing the productivity of captured metropolises. Be sure that you keep the settlers to the rear of your advancing columns, away from lines of battle. Move them up only as you secure the territory they will occupy.)

The nature of the city defenses will affect units you use in your assault. If the city has walls, you are safest making an assault with units of at least catapult level. Legions, chariots, and cavalry units are less likely to breach the walls with their assault, more likely to be destroyed in the attempt.

The dilemma with catapults is that, over open terrain, they are capable of only a single square's movement per turn. This means it takes longer for the unit to arrive at the front, and that it can only strike once per turn when in position. (Naturally, catapults—and their descendants, cannons—can move farther over roadways. You won't always, in early wars, have roadways at your disposal.)

For these reasons, move your artillery in clusters, being careful not to stack them if you can avoid it. With more than one catapult at your disposal you'll be able to position your assault artillery on more than one side of the besieged city, hammering the target at least twice (unless your unit is unsuccessful) a turn. The more often you can strike, the more quickly the siege is likely to be resolved in your favor.

Keep reinforcements moving toward the front. No matter how carefully a campaign is planned, there will come a time when you need fresh units. A constant stream of new troops and equipment helps ensure that your campaign achieves its goal.

When the city *does* fall, don't be too quick to press your advantage and push on into enemy territory. The captured city must be held, its infrastructure repaired, its garrison replenished with your own forces. Reassign any occupying troops to the new city, and give some thought to building a temple or other civic improvement for the city's inhabitants. After all, they've just come through a long siege, and are not predisposed toward showing you a lot of support. You can win their favor, and turn their productivity to your own ends, giving you a source for new units that's located close to the front. Only when the city is wholly secured—at least two fortified units in place—should you move on.

The Lessons of History

Technology shaped the nature and evolution of siege warfare, just as it shaped all other aspects of war.

The development of fortifications—represented in the game by masonry and city walls—had to be countered technologically. Walls called for artillery.

The earliest forms of artillery were catapults, a technology which evolved over centuries, until gunpowder displaced tension and gravity as the best means for dispatching projectiles.

Descendants of the catapult include the Roman ***mangonel,*** *which could hurl stones weighing hundreds of pounds. (The Romans, by the way, used woven human hair as the cord which was drawn tight by a winch, creating the tension which, when released, hurled the stone.)*

The ***balista*** *was a sort of giant crossbow, and could fire either stones or pointed projectiles, such as javelins.*

The ***trebuchet*** *was capable of lobbing large projectiles over tall walls.*

Catapults and their kin were used to hurl more than projectiles. Chemical weapons including "Greek fire"—a combination of sulfur, pitch, and petroleum—served as early precursors of napalm, and could be discharged by some artillery. There are even instances of catapults being used to heave dead—and, sometimes, plague-infested—bodies over enemy walls.

Although you don't have chemical weapons at your disposal in the game, you should use artillery of whatever level you can produce, when laying siege to enemy cities and fortifications.

In *Sid Meier's Civilization,* logistics are almost everything. Lines of supply and reinforcement can in *Civilization* become as vital as in the real world. It's a good idea to use a band of settlers to build roadways from your cities to the front. This will greatly increase your ability to move up fresh troops rapidly. Railroads, if you possess the technology, are even better.

At some point, as your supply lines stretch out, order your settlers to construct a new city. There are several advantages to this—you can generate new units much closer to the lines of combat; you can fortify the city, giving you a solid base close to enemy territory; and you can reassign forward troops to the new community, easing the productive pressure on your central cities.

As you move across the continent, continue to extend defensive, as well as offensive lines, placing more primitive units on picket or sentry duty. Your enemies are crafty and may well try to sneak diplomats of their own into your cities where they will wreak the same type of mischief and intellectual thievery you committed against them.

CIVILIZATION KEY

Don't be afraid to take a breather during a long campaign or war. You can go too far—exhausting your resources and your people's willingness to fight, falling short of your goal of absolute victory.

From time to time your enemies will offer to make peace with you. If need be, accept the treaty and use the time you're buying to rebuild your combat forces, replenish your treasury, increase the public's morale and support for your undertaking. You can always break the treaty later . . . if you're that kind of leader.

Seriously, if you do take a respite from combat, be sure to extend your information-gathering resources to their fullest capabilities. Place ships on sentry outside enemy harbors. Post pickets and sentries along land borders. Have diplomats ready to undertake spy and sabotage missions as soon as hostilities are resumed.

Gradually, as you consolidate your hold on the island or continent, you can decide whether to fully obliterate the enemy or allow him to keep a couple of cities alive for your use as trading partners.

Suppose, though, the enemy is not on the same landmass as you. Your job becomes much more complicated. You have to move your forces across water and land on enemy shores.

Amphibious Invasions

The first step in a successful campaign of amphibious invasion and conquest lies in logistics. Know where you're going, the shortest and safest route to get there, how many units you'll need to wage a winning war, and how many ships you'll need to carry them. It doesn't sound easy, and it's not even as easy as it sounds.

The Lessons of History

The largest amphibious assault in history took place on June 6, 1944 when Allied forces invaded continental Europe in order to dislodge the Nazi conquerors. To do so, the Allies amassed an armada consisting of more than 4,000 transport vessels, more than 6,000 warcraft, a landing force in excess of 175,000, as well as thousands of aircraft flying support missions.

Despite the huge number, the invasion force was for a time held essentially stationary on its beachhead, pinned down by well-entrenched Axis forces. Strength of numbers, aided by constantly arriving reinforcements and materiel, enabled the Allies to accomplish what neither Napoleon nor Hitler were able to: mount a successful invasion across the English Channel.

When planning an invasion, make sure, at all costs, that you can seize—and hold—a beachhead. And be just as sure that you'll be able to deliver additional forces to the beachhead as soon as possible.

Having located an enemy island or continent, your first step is to examine its location relative to your home. Scroll around the screen, following the route your ship took on its voyage of exploration. Learn how many turns the voyage will take. Look to see if there are areas on your home island or continent which lie closer to the enemy than to your starting point. If so, put units in motion to

establish cities and production in those areas. You'll appreciate the proximity once warfare has begun. Look for islands close to the enemy homeland and establish cities there. Anything you can do to cut the amount of time required to move additional forces to the front will serve the cause of your campaign.

Do what you can as well to keep the enemy from discovering the location of your forward bases. Here's another opportunity for blockades and the sealing of chokepoints: Keep the other guy pinned down while you establish your line of supply and mass your forces for the invasion.

You might find it advantageous to strike at least a temporary treaty with the civilization you plan to invade. A treaty will give you the chance to land diplomats or caravans who can prowl around the interior of the enemy landmass, scoping out defenses and attractive target cities while you prepare the main invasion force.

You'll also want to be on the lookout for landing sites. These are not necessarily located next to enemy cities, although those sites let you launch immediate attacks on enemy strongholds. Sites next to cities also give the enemy the chance to strike a first retaliatory blow against your landing force: Units which have debarked from ships have no movement points left, and are vulnerable.

Your best site for an amphibious landing, then, lies a square or two removed from areas of enemy activity.

Move your landing craft into position carefully. Marshal your ships' movement points so that they can debark a unit or two, then move to another location for further offloading. This helps avoid the risk of stacking units. Long, deep, natural harbors and fjords are especially effective landing sites, as you can offload troops in a variety of spots, even allowing for the limited movement capabilities possessed by your ships.

(Limited cargo capacity will also hamper your invasion plans. Triremes, able to carry only two units, make lousy invasion craft. Sailing ships are only slightly better. The best craft for mounting

large invasions are frigates and transports, both of which require advanced technologies to produce. If triremes are all you've got, though, they're all you've got: You'll learn, as you play *Civilization,* to make do with the equipment you have at hand.)

Remember, too, that your amphibious forces will dwindle during the invasion. You're going to take casualties, and you're going to have to replace them.

BEACHHEAD

For that reason, among the first wave of invaders you should include a band of settlers. With these you can establish a city of your own, on enemy territory, and use it to produce fresh troops who don't have to be transported. If you locate a city right at the front, you'll need plenty of troops to defend it from what might be a pretty vigorous enemy response.

Better still, for this reason, is the "stealth" approach. As you discover the enemy civilization's location, seek as well to discover unexplored territory beyond their immediate frontiers. The presence of serendipity squares is a pretty good indication that the enemy has not yet explored the territory in question. Get a city established on that territory as quickly as you can! That city will then serve as your forward outpost, and can be especially effective as both a breeding spot for diplomats and a staging area for a large-scale campaign.

The most effective—or at least most efficient—way to establish such a forward base is to launch your campaign with sufficient funds in the treasury to enable you to buy those infrastructure items you'll need most quickly: a barracks for production of veteran units, a granary for food storage, and another band of settlers to make the city more efficient and productive. That's a fair piece of change, but if you can't afford to make war, maybe you shouldn't.

Don't neglect to build additional cities in enemy territory as soon you are able. They further increase your productivity—and the odds in your favor—as well as giving you the tools to create infrastructure to support movement of your military units.

Neither should you overlook the fact that, with a lone outpost on an enemy continent or island, you are, for several turns at least, returned to defensive mode. Your priority should be fortification and protection of your outpost. To that end, post pickets as close to the enemy lines as you can without too quickly incurring an attack from them.

If there is an isthmus between your outpost and the enemy's lines, you might consider placing a ship at sentry there. The ship will afford you the same knowledge of approaching enemy units without placing any of your ground-based invasion units at immediate risk.

Should you have the time and resources, place a city on the isthmus at its narrowest point. Garrisoned with defensive and offensive troops, equipped with a barracks and city walls, the fortified city should stop all but the most determined or overwhelming enemy assaults. (It will also serve as a canal zone through which your seafaring craft can travel from one side of the isthmus to the other, cutting long distances from their journeys.)

As your bases become well-established, and you capture enemy cities and make their resources your own, your amphibious assault will evolve into a ground-based campaign. Your ships will be free to search for other landmasses and other civilizations to attack.

But there's more to civilizations—not to mention the game of *Civilization*—than making war. As we'll see in the next chapter, even a successful warlike civilization must attend to its domestic development—and that means establishing and nurturing its cities, striking a balance between military and civilian needs.

Chapter 7

Cultural Considerations

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Cultural Considerations

What distinguishes *Sid Meier's Civilization* from all the other interactive entertainments I've seen is the unrelenting emphasis the game places on culture and cultural questions. Culture is the sum of a civilization's parts. More than that, a culture consists of and is defined by the ways in which those parts combine to create something that is truly more than just a simple sum. The great cultural critic Jacques Barzun has pointed out that the essence of culture is *interpenetration,* that process of societal osmosis whereby art feeds science, technology serves politics, and so on.

In Meier and Shelley's game, interpenetration also plays a role. Each cultural advance or achievement introduced into the game lays the foundation for another, but also increases your abilities and capacities in existing areas. Coordinating the intersection of ideas and goals is your job, and it should be taken seriously. Get to know the Civilization Advances chart in the game's manual, learning the relationships Meier and Shelley establish among ideas and groups of ideas. These do not necessarily coincide with true

historical relationships, but do make sense within the context of the game itself. More important, the relationship of ideas and advances within the game is crucial to winning the game. You have to shed some preconceptions in order to follow the game's flow.

As we'll see during the course of this chapter, the nature of your culture plays a large part in determining the nature of the game you find yourself playing. There are steps you can take which help control and direct your culture's evolution, but there are also limitations of time and resources placed on you as a civilization leader.

Massaging those limitations to your best advantage—managing, in other words, the nature of your cultural interpenetrations—is among the largest and most engaging challenges contained in *Sid Meier's Civilization*.

Primitive Culture

The words primitive culture, in fact, reflect our own biases: Many early cultures displayed quite impressive levels of sophistication. So it is in *Civilization,* as well.

During your first millennia or so of play, depending upon the level at which you're playing, your cultural opportunities are relatively limited. We've seen in previous chapters the necessity of investing a major portion of your early cultural development energies in advances that offer immediate benefits to your cities' security and productivity. At higher levels of challenges, your options will be further limited by the increased amount of time it takes to achieve an advance, as well as by a more limited number of opening choices for advancement.

Accepting, then, that you must possess metalworking skills in order to build a strong defensive or offensive force, as well as pottery in order to be able to gain and encourage city growth, is there a single cultural advance whose value outweighs all others

and whose development is fundamental to all aspects of your civilization? In fact, there is.

The answer, in the game as in human history, is the same: *writing*.

It was writing, developed by the Sumerians about 3000 B.C., that enabled the true long-term growth of society. Only by freeing memory from the limitations of oral culture and its reliance upon the passing down of information from one individual to another could large-scale undertakings be pursued.

There is a chicken-and-egg aspect to the debate over the development of writing. As agricultural endeavors became more and more elaborate, with irrigation works constructed over years and decades, the keeping of records became more complex.

Irrigation itself first came into use about 7000 B.C. in the valley of the Tigris-Euphrates rivers. So about four millennia of agricultural progress, however fitful, throughout the near- and middle-Eastern regions, had elapsed before writing came into use. Those 4000 years had resulted in a mass of information and records far too large to be stored in an individual's memory. Necessity, some historians say, gave birth to writing. (Conversely, there are scholars who argue that the development of writing enabled the creation of more complex irrigation systems.) Either way, some mechanism was required for preserving the information obtained each season. That mechanism was writing, the transformation of oral information into symbols. Writing is memory made tangible. More than that, writing made possible the easy transport of large amounts of information over long distance, as well as the concentration of large amounts of disparate information in centralized locations.

These accomplishments are reflected in *Sid Meier's Civilization,* to your great benefit as the leader of a growing empire. The symbolic nature of writing is represented in the game by the development of the alphabet, which must precede the development of writing itself. (The alphabet also underlies mapmaking and the

development of a code of laws, two other historical accomplishments impossible to conceive without some symbolic and compact means of recording, preserving, and distributing information.)

On the international front, writing makes possible the immediate production of diplomat units whose special capacities we've already explored. In your cities, writing enables the construction of library improvements, which increases the city's production of knowledge by 50 percent—hastening your civilization's development of new ideas and advances. Build libraries in every city that can support them, bearing in mind that each library costs one monetary unit per turn for maintenance, a small price in light of the intellectual capital the library generates.

Writing is one of those gifts that keeps on giving, and the best way for you to take full advantage of writing's potential is to pass the gift on to all of your citizens. Literacy, which in *Sid Meier's Civilization* is a direct lineal descendant of the development of writing, lifts your civilization's intellectual potential a further notch, making possible the greatest of all the ancient Wonders of the World: The Great Library.

THE LESSONS OF HISTORY

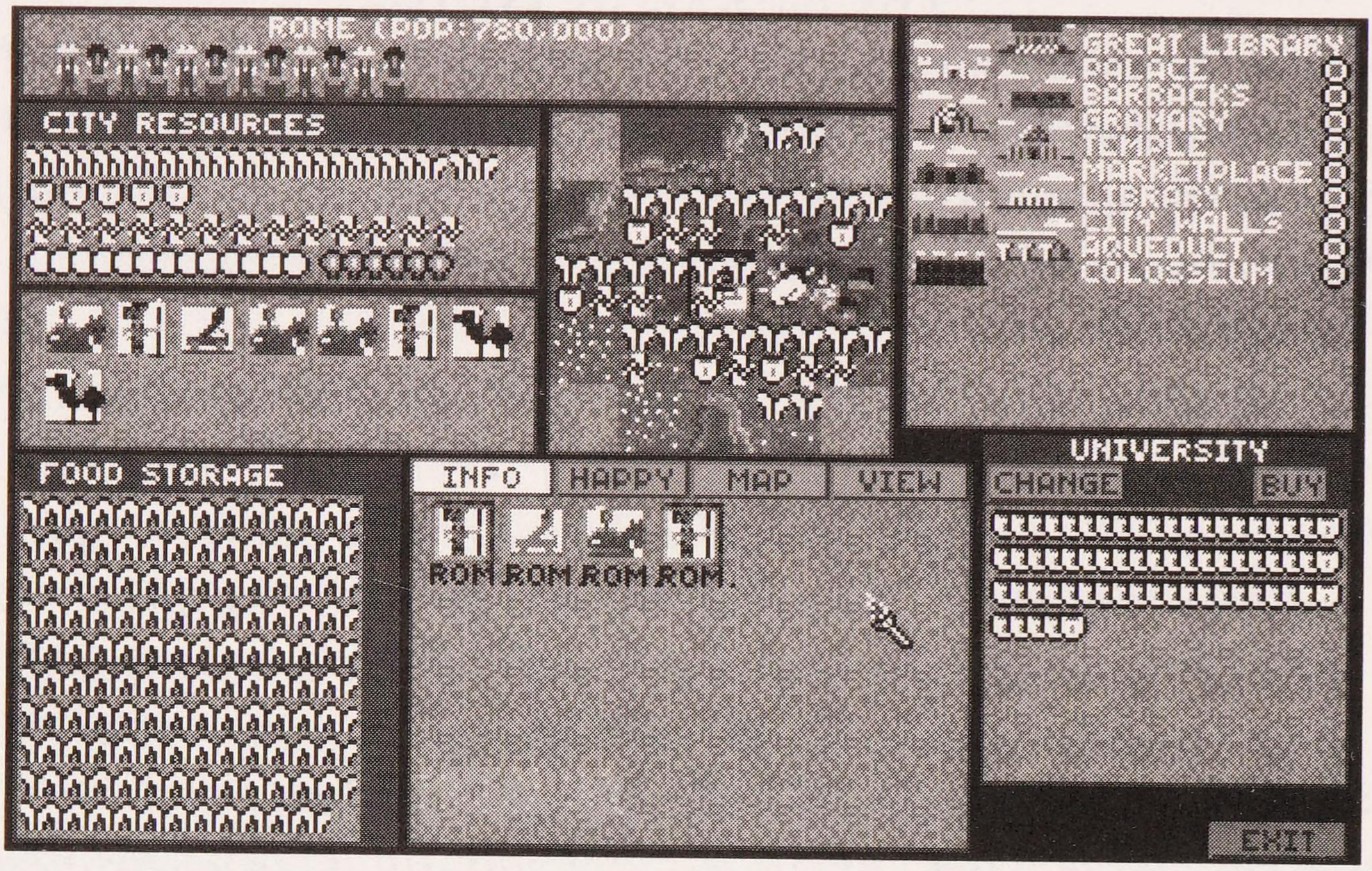
The portability and durability of writing as a means of storing and transmitting information resulted in the first vast storehouse of human knowledge: The Great Library of Alexandria, one of the crowning cultural achievements of Ptolemaic Egypt.

Built around 250 B.C., the Library's collection eventually numbered hundreds of thousands of scrolls, with some estimates placing the collection as high as three quarters of a million "volumes." Nor were these exclusively Egyptian: The Library housed papyrus from throughout the known world, a true example of cultural interpenetration in action. (For that matter, the Ptolemies were not Egyptian either, but Macedonian. Such is the nature of cultural interpenetration.) Alexandria, not least because of the Library, was for centuries the greatest of all cities, and the true capitol of the world's intellectual and artistic activities.

The Ptolemies were devoted to learning, and their devotion—along with resources such as the Library—attracted and nurtured the world's finest scholars. Euclid formalized many of the principles of geometry during his time in Alexandria. The astronomer Aristarchus studied there, daring to suggest that perhaps our world revolved around the Sun. Erasistratus made early attempts at systematizing anatomical knowledge. Eratosthenes, one of the librarians in charge of the Great Library, ca. 225 B.C., not only assembled a world map based on known knowledge but also derived the globe's circumference, placing it at 25,000 miles: right on the money.

Such Wonders cannot last forever. The Library was destroyed by fire early in the Christian era. Some attribute its destruction to Julius Caesar's siege of Alexandria. Whatever the cause, the loss of the Library was a blow to our understanding of the ancient world that will never quite be overcome.

O Chapter 7



Don't neglect the cultural and intellectual side of civilization. Universities and libraries can help you make discoveries more quickly, increasing your chances of success.

Beyond that, writing offers a couple of other direct descendants, including philosophy, and the greatest—if most difficult to manage—of all governmental forms, democracy.

Develop writing at all costs as early in the game as possible. You will be tempted, especially if you're located on an island, to pursue advances with more immediate benefits, such as mapmaking. Don't be too hasty: Writing is the basis of all modern culture, the foundation from which all civilization advances flow.

Religion Rears Its Head

Consider the brilliant central metaphor established with *Sid Meier's Civilization*'s very first screen: a world of darkness with only the immediate local neighborhood known to you. Everything else is hidden, mysterious, even forbidding. Press beyond your local environment and you might discover wealth and opportunity—or enemies more powerful than yourself. Dispatch sailing vessels into the unknown seas, and they might never return. Gaze

up at the sky and wonder what powers dwell there among the myriad tiny points of light.

The metaphor of the darkened screen is an excellent one, duplicating for the player some of the mystery of the world and the cosmos that must have been felt by our own early ancestors. As the leader of your civilization, you have some options for allaying your population's fear of the unknown. As in true history, among the most powerful tools at your disposal is the invention and development of religion and religion's appurtenances.

While the initial—and, in some ways, primary—benefit of religion to your civilization is the effect it exerts on your population, raising the citizens' level of satisfaction, do not underestimate its pragmatic benefits. After the first two purely spiritual advances—ceremonial burial and mysticism—direct progress leads to astronomy, after which navigation, physics, steam engines, electricity, and even computers flow.

Just as pragmatic but not as blatant are the effects of religion on your government. Build temples and, later, cathedrals for your people, and the task of managing them becomes simpler. You are attending to their spiritual needs, which makes them more docile; if you look at it cynically, they become more energetic and at ease if you take a more benign view of religion. The opiate of the people, religion has been called, and its effects are certainly well-represented in *Sid Meier's Civilization*.

(Ironically enough, in the context of the game, religion itself as a discrete advance descends from the alphabet and writing rather than mysticism and ceremonial burial. This may have as much to do with constraints imposed by designing a playable game as with history itself, although a case can be made for organized religion resting on the development of written symbols. Certainly large-scale religious organizations understood the power of writing—and thus endeavored to keep that power for themselves.)

Religion's power within your cities is greatly extended by the construction of religious institutions. Ceremonial burial, the first

spiritual advance available to your ancient civilization, gives you the ability to build a temple in every city. Do so. Temples offer a solid foundation for a happy populace at a relatively low price.

Additionally, the presence of a temple can stave off natural disaster in the form of volcanoes that threaten your cities on a random basis. While historically this makes little sense—ask the temple-goers of Pompeii or Thera—it's a nice touch in the game.

Study the Civilization Advances chart in the game manual if you want further evidence of the impact of early and subsequent spiritual advances on your electronic civilization.

Once you've established a religious presence in your cities by building a temple or cathedral, you have to maintain them. This can be fairly expensive over the breadth of a large civilization, nor are these easily sold items should your financial straits grow dire. While you can generate some quick cash by selling your religious buildings, your people will very quickly let you know what they think of this strategy.

Finally, bear in mind that religion is best served by huge central structures and institutions that give far-flung followers a focus for their beliefs. Build religious Wonders of the World if you are able to. Their benefits spread across whole continents and, although intangible, are hardly insubstantial.

ARTS AND SCIENCES

The relationship between art and science has been the focus of much thought during our century. C.P. Snow, perhaps most dramatically, illuminated the dilemma in a short book whose title alone speaks volumes: *The Two Cultures*.

In *Sid Meier's Civilization,* the two cultures are directly related, although here, too, especially at the later stages of the game, pure art and aesthetics tend to take second place to the acceleration of advances in science and technology. This can be problematic, to say the least. Purely aesthetic and spiritual ad-

vances, improvements, and Wonders of the World keep your people content and boost their loyalty and productivity, but may do little to protect you from voracious enemies. Scientific and technological advances, improvements, and Wonders of the World are vital to your military success and security, but may ultimately cause large-scale environmental devastation that exerts a serious negative effect on your overall score.

The trick, once again, is to strike a balance between the two. Doing so places upon you the dual burdens of long-term thinking and short-term economics. Cultural advances and improvements cost money, both to create or construct, and also to maintain. You must be guided in your decisions by what you can afford, as well as by what you want to achieve.

There's also the pressure of time. As you pass the midpoint of the game—ca. 1000 A.D.—the effects of your culture on the world begin to be felt more dramatically. You are approaching the rewards and dilemmas of industrial life, and that approach is further complicated by increasing population pressures. Your enemies have grown stronger and their numbers have likely increased along with your own. The temptation, faced with the threats from outside, may be to focus your energies and resources on purely scientific and technological advances, deferring until better times the development of artistic wonders and technologies that exert a more benign impact on the world.

Making this decision leaves you more vulnerable to social unrest and environmental collapse. Your civilization becomes one-sided, out-of-balance. Think of your civilization as a living thing, standing astride the world. It's hard to stand for long on a single leg. Eventually you topple. No matter how difficult it may seem, from turn to turn, you must attend to both sides of your culture, both aspects of your civilization if you have hopes of it standing tall, and standing for long periods of time.

Cultural Improvements and Wonders

Keep an eye on your cities. Each will, at times, require the construction of a cultural improvement or Wonder of the World, but each will also at times offer better conditions for undertaking that construction.

Pay close attention to the cost of improvements. Costs go up and down with the city's fortunes, or, rather, the time required to complete the construction of an improvement may rise or fall with the city's economic fortunes. As your treasury grows, there may be times at which it makes both practical and economic sense to purchase a city improvement rather than waiting for its turn-by-turn construction.

Monitor the "happy" window in your city screen to get a good index of your citizens' mood. This information can guide you in your selection of which improvements to purchase. There will be times during the game when you have little choice but to invest, perhaps heavily, in "bread and circuses": improvements such as coliseums that serve to allay public dissatisfaction.

Choose a good mix of cultural improvements for each city, bearing in mind that these structures and institutions carry a maintenance charge each turn. Pick those improvements that will lend the greatest benefit to the city in question.

While temples, coliseums, and cathedrals lend immediate benefit to your population, attending as they do to spiritual and leisure needs, don't neglect the more purely intellectual side of your culture. Libraries and universities do little to enhance the public mood, but they do exert a great and long-term effect on your civilization's ability to produce new ideas and achieve Civilization Advances. Pick at least a few cities and make them seats of great learning, perhaps even shifting a citizen or two to intellectual work as an "Einstein."

You should also weigh the advantages of building cultural as well as political and technological Wonders of the World. In fact,

of the 21 Wonders of the World in the game, fully a third are purely cultural in that their nature relates to ideas, art, or religion rather than industry, economics, or warfare. These Wonders not only boost your overall civilization score, but also lend strength and suppleness to the cultural backbone of your civilization.

BUYING AND TRADING CULTURE

Interpenetration, as Barzun pointed out, is not simply the essence of one culture; it's also the long-term consequence of contact with other civilizations. In the game of *Civilization,* those consequences are made available more quickly. When you acquire a piece of culture from another civilization, its benefits spread immediately throughout your own.

Cultural exchange in its most common form in the game occurs when you make contact with representatives of other civilizations. You may be offered the opportunity to exchange knowledge. The other civilization will inform you of the advance in your possession that they want, and you will be able to accept or decline the offer. If you accept, you may choose from their roster of advances. (If you refuse, you may find yourself at war.)

Here again, information is paramount. If you have established an embassy inside the other civilization, you will already have a working knowledge of which advances that civilization possesses. Study their current request carefully. If they are seeking to obtain one of your key technologies, one of the advances that has given you the upper hand in your relationship with them, think twice about agreeing to the exchange.

On the other hand, it may be that they seek an advance which has only limited immediate use as a tool of aggression against you, in which case it may be worthwhile for you to proceed with the exchange. You may come out with the best end of the deal.

Perhaps the best situation occurs when a weaker state whose borders you have carefully proscribed achieves advances that you don't yet possess. Because the other civilization is substantially and

probably permanently smaller than yours, you can feel freer about giving them advanced technologies in exchange for knowledge you do not yet possess. The advantage here is virtually all yours.

(This, by the way, is another good argument against completely overwhelming other cultures unless you're going for a quick total victory. Keep an especially close eye out for enemy cities possessing large intellectual resources such as universities. Their generation of knowledge may be faster than yours. If you're stronger, simply encircle the other city and either exchange knowledge with its leader if offered or use diplomats to steal the advances as they become available. Manage this aspect of your world right and you can leap up the cultural scale far more quickly than with your civilization's wise people serving as your only source of ideas.)

Some enemies make cultural contact a one-way street, always asking for advances, never offering any in return. In fact, what's generally being offered in return is your life, or at least a delay in the bully-state's warmaking efforts against you, so you may have no choice but to give away your hard-won advances. (Remember, though, that some of these recidivist states will seek only war no matter how hopeless their cause. Make sure the enemy really is overwhelmingly stronger than you before you accede to their wishes.)

Finally, you can acquire culture from other civilizations by capturing their cities. This fact reinforces the need for solid, constant information-gathering throughout the world. Especially as the game moves into its final centuries and the race into space is undertaken, you need to know who else knows what. That way you can target specific civilizations for attack and the capture or theft of ideas and advances crucial to your victory.

Doing Without

Don't.

It is certainly possible to pursue noncultural (in the higher sense of the word culture) advances during a session of playing *Sid Meier's Civilization*. You could, for example, follow a course leading from an ancient foundation of metalworking and use of construction materials through pure building and manufacturing technologies to high science. You can do so without ever building a cathedral or a university.

You cannot, I think, do so at a highly advanced level of government or with large-scale popular support. Only a despot can effectively deny his people their religious and aesthetic due, and despotism is the least efficient means of government in the game.

Besides, *Sid Meier's Civilization* is a game with more than a few messages at its heart. Among them is the important and obvious lesson that history rests on more than the drama of military conquest and brute industrial force. These may be the items that make the most commanding entertainments and diversions, but the history of ideas is even more vital, even more entertaining if you take the trouble to look, even more rewarding if you're playing the game in pursuit of a high score rather than a high kill ratio.

Invest in your culture, nurture your citizens' souls. You'll be glad you did.

Chapter 8

Questions of Balance: Commerce and Government

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Questions of Balance: Commerce and Government

In a sense, every aspect of the game rests upon economic and governmental principles. Your productivity, whether for overtly militaristic or altruistically domestic ends, is determined by the economic structure and capacity of your civilization. The amount of income you devote to scientific research, governmental revenue in the form of taxation, and luxury income distributed to your people affects the speed with which your civilization develops or declines.

The nature of your government plays a huge part in determining the level of popular support you enjoy, the degree to which your people support your policies and are willing to produce the goods and institutions necessary to see your policies through.

The two go hand in hand, although economic decisions must be made virtually every turn, whereas alterations in your form of government occur much more rarely. Governmental decisions, if

you will, are macro-decisions, large moves affecting the big picture. Your economic decisions and manipulations represent the "micro-management" aspects of the game, lots of small questions that must be answered, closeup details to which you must attend, careful adjustments that must be made with some constancy and consistency.

TO MARKET, TO MARKET

At the heart of each of the economic operations contained within *Sid Meier's Civilization* is the idea of currency and the locales in which it is used: the marketplace and, later, the bank.

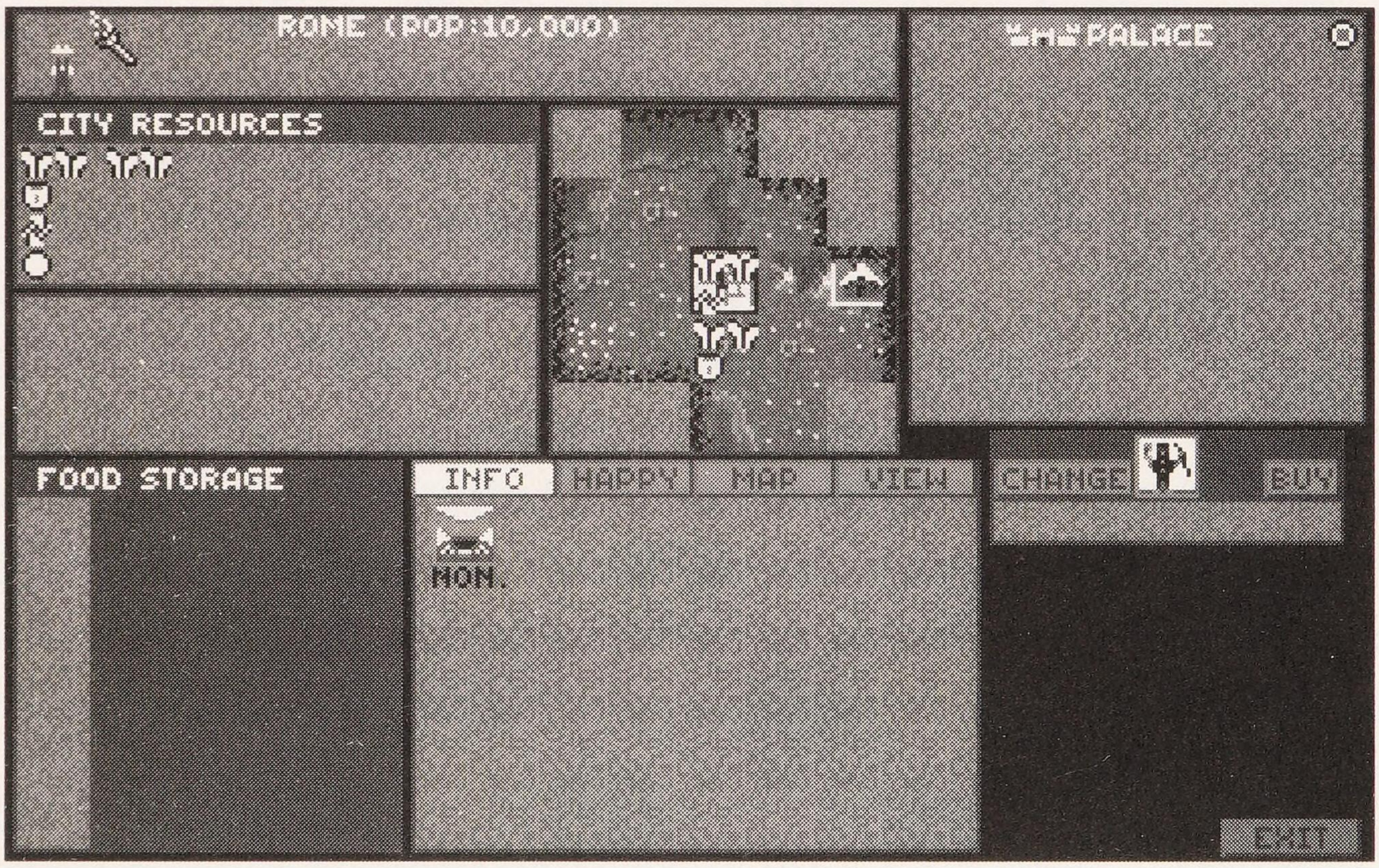
The marketplace is among the earliest of the city improvements directly related to your economy, and should be introduced into each of your cities as early as possible. Doing so boosts both tax and luxury revenue by half, and can go a long way toward putting a city on sound economic footing.

The introduction of a marketplace may also introduce you to the challenges of maintaining a strong city economy. If, as is sound strategic policy, you build a marketplace only after your granary and barracks improvements, you will begin to encounter the speed with which the cost of maintaining city structures accrues. The barracks and granary cost one monetary unit per turn to maintain, as does the marketplace. (Subsequent barracks improvements, required as military technology climbs the civilization advance ladder, cost two units per turn for maintenance.)

While the marketplace increases your income levels, it also increases your levels of expenditures. Add a temple to increase the domestic tranquility, and you've added another unit per turn in cost. Dispatch certain units to remote locations and, again, you incur costs that must be paid each turn. Your overhead can quickly reach five or six units per turn, or higher.

This may not seem like a lot of money, yet. Because you are introducing the marketplace early in the game, you'll want to be

certain that the city can afford its maintenance. It may be wiser, upon consideration of the city's productive capacity, to invest first in an additional settler unit to further increase the exploitation and productive capacity of local resources, only then adding the marketplace and other improvements. Careful examination of each city's surrounding terrain, as well as its income levels and resources, will help you make the right decisions, and time those decisions properly, on a city-by-city basis.



At first your city's information screen will be all but empty. It's up to you and your leadership abilities to feed and support your citizens.

MANAGING THE LABOR FORCE

Sid Meier's Civilization automatically assigns your citizens to tasks in the countryside surrounding each city. Some are farmers, others work the mines, some tend to industrial production. The default assignments are generally sufficient to see to the city's needs, but may not be the most productive arrangement of your labor force. Additionally, there may be times when you need to boost productivity and income for a turn or two, and are willing to do so at the expense of, for example, food production.

At such times you can take a direct hand in the job assignments of your laborers, choosing exactly which terrain squares are under development and production, and which are not. As you move your force around, keep a close eye on income levels as well as food production.

Food production is especially important, and especially vulnerable. The presence of a granary makes it possible for you to build up a surplus of foodstuffs with which to feed your population. The surplus in turn enables you to feed your citizens from the granary rather than the fields, should you wish to shift the balance of production to your mines, say, for a turn or two, in order to increase cash revenues needed to complete construction of an improvement, Wonder of the World, or military unit.

This is a very risky approach! Your granary's resources can be depleted more quickly than you might expect, particularly by the population of a vibrant and growing city. For all that the increase in revenue from mineral resources may help you temporarily, that help may be more than mitigated, though, if you deplete your granary reserves and subject your population to the devastation of a famine. Not only do you lose population, which must slowly be rebuilt, you also risk losing the confidence of your people (rightly so!) and throwing the city into disorder. Drain your food reserves at your own peril.

TAXMAN

In addition to shifting workers among the city's customary productive tasks, you can also remove workers from traditional productive pursuits altogether, creating specialist citizens who apply their energies to specific and, at times, vital tasks within the city's economy.

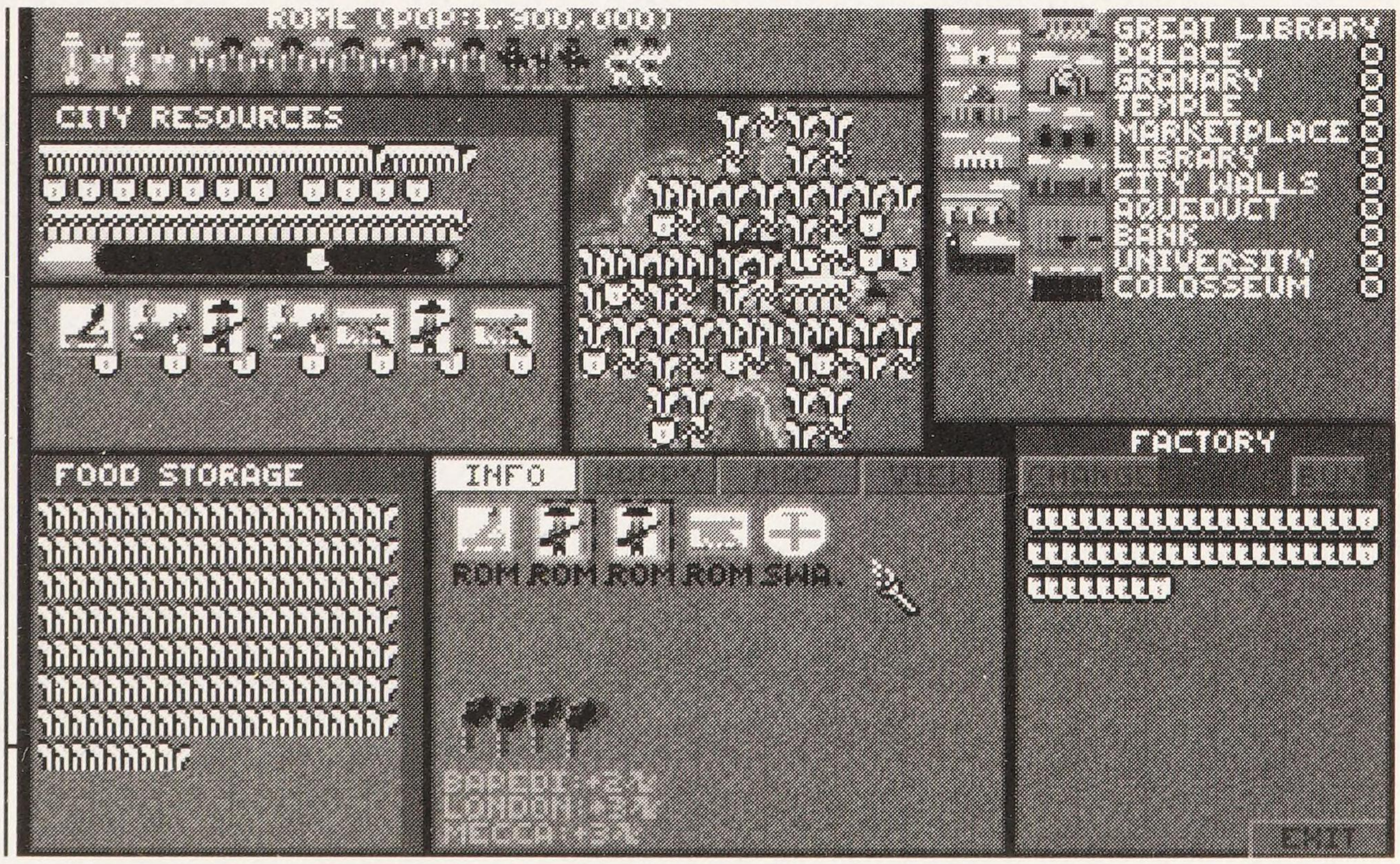
Notable among these is the tax collector. This bureaucrat sees to it that a higher percentage of your trade income is collected in the form of taxation revenues. These monies are required to pay

the maintenance costs of your improvements, as well as accruing toward the purchase of new improvements, Wonders of the World, and additional units.

You can adjust the balance of revenues for your entire civilization, increasing or decreasing the amount of revenue applied to taxes and scientific research. Experimentation with these adjustments, tempered by careful monitoring of your population's attitudes toward the tax rates, will help you find those rates most effective for your goals.

But you can also boost the tax revenues from particular cities by taking a square out of production and assigning its citizens to tax collection. Doing so has the benefit of boosting the amount of money at your disposal for construction projects, but carries the drawback of loss of production from the terrain square in question. As we saw above, that loss of production, if the square was a food-producing one, can result in dire consequences for your cities.

In *Civilization,* as in the real world, nobody really likes the taxman—but you may find that he is just as necessary.



Use your city screen to track and adjust each city's production, economy, and garrison. In many ways, this is the most important of all the screens in the game.

Let Me Entertain You

Luxuries leaven the world's weight for your citizens, making them more willing to put up with the travails of life in your civilization. Luxury income is created by trade or by creating specialist citizens whose job it is to entertain your people. The symbol for these entertainment specialists bears a certain resemblance to a famous entertainer, believed to have died years ago, but actually living in secret in a variety of places throughout our world or on other planets.

Seriously, entertainment specialists can provide a quick fix for certain domestic problems. Luxury income and entertainers offset the presence of unhappy and discontent citizens in your cities. The most effective way to overcome the malcontents is by maintaining a solid level of luxury income, by building and maintaining temples, cathedrals, and structures such as the coliseum, and by establishing a benevolent representative government.

You may not, however, have the time or resources to attend to all of those undertakings. You can remove, in such cases, squares from development, converting its workers into entertainment specialists whose presence decreases the amount of discontent in the city.

This should be done only when a city is in disarray, its citizens unhappy. At such times the city ceases to be a productive institution, and a quick fix is called for. Entertainment specialists serve the function of "bread and circuses," distracting the citizens from the city's more deeply rooted problems.

You must attend to those problems immediately and lay a long-term foundation for that city's domestic tranquility. Elvis, as it were, can only do so much—better to move military units, if your government is of the totalitarian flavor, into the city and impose "contentment" through martial law, than to lose for too many turns the productive capacity of the city in order to sustain artificial levels of luxury through entertainment.

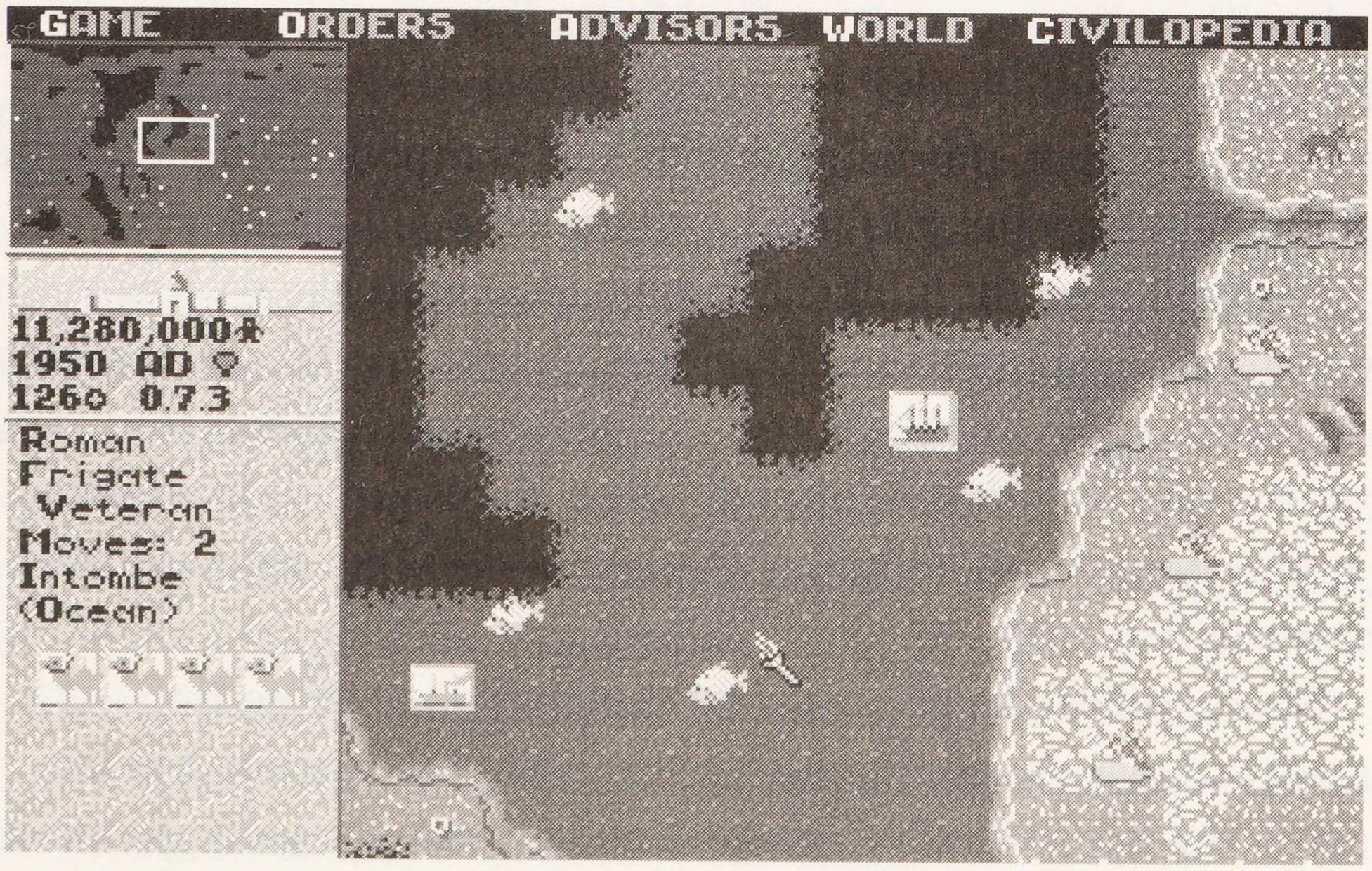
BRAIN POWER

The third—and, in some ways, most effective—specialist citizen at your disposal is the scientist. Creating a scientist is accomplished by removing a square from production, but in this case you may want to consider the specialist a permanent citizen of some cities, rather than a quick or temporary fix for short-term problems.

The reason for this is the special contribution the scientist makes to your civilization. His presence boosts the level of scientific research produced by his city, making a direct contribution to your civilization's pursuit of advances and the rapidity with which those advances are achieved.

Scientists are most effective when introduced into cities already possessing large intellectual resources such as libraries and universities. Because *Sid Meier's Civilization* is a race for advances, the contributions of scientific specialists can play a large part in whether you win the race or fall behind.

As with any specialist citizen, though, you must be certain that the city in which the specialist lives can endure the loss of production from the square converted to special purposes.



Dispatch as many caravans as you can and send them to the most lucrative foreign ports and cities. This is where you reap the largest rewards.

Chapter 8

Trade!

The caravan is among my favorite units in *Civilization*. Its symbol, the trader mounted on camelback, is inescapably romantic, implying difficult journeys to distant cities in hopes of delivering valuable—and profitable—cargo.

There's a pragmatic aspect to the romance. It is through trade with foreign powers that you achieve greatest income. Properly established and managed trade routes can become virtual rivers of currency flowing to your cities, providing the financial basis for great programs of expansion and development.

There's a dangerous side to trade as well. Your caravans are all but unprotected, easily destroyed by enemy military units or barbarians. During times of war, caravans are easy targets for even the weakest enemy units, yet during wartime your caravans are even more vital to your civilization. You need the initial cash hit the establishment of a new trade route supplies, and you will also appreciate the revenue that route generates each turn.

Because each city can support only three trade routes, it's wise to spend some time gathering information about those cities which will make the most profitable trading partners. It's a given that your trade routes will be more successful if they lead to foreign cities, and even more successful if those cities are located on other continents or islands.

Even then, there are further steps you can take to enhance the value of your trading routes. Send explorers into the dark hearts of other continents, in search of the largest cities you can find. The larger the city—the higher the number displayed on its square—the higher your initial burst of income and the revenues earned during subsequent turns.

The exploration process and the challenge of getting your caravans to less accessible but larger cities takes time, but it's worth it. *Sid Meier's Civilization* automatically selects the three highest valued of your trade routes, so there's no chance of your

supplanting a higher-valued one with a lower. But there is a question of time involved in establishing more than three routes in order to get those three worthwhile ones. Again, information is everything. Take the trouble to do your homework, then try to build no more routes than are absolutely necessary in order to get three of high value.

You will be tempted as well to use caravans to help build Wonders of the World. This is worthwhile, as a rule, only if you can build the caravans quickly in cities that are well furnished with improvements, which already enjoy successful trading relationships with three foreign cities, and whose citizens are productive and happy. Otherwise, the effort invested in producing a caravan unit and moving it to the city building the Wonder might best be applied to seeking out more profitable trade destinations overseas. The cash bonus earned for establishing such a route immediately adds to your treasury, making it easier for you to hasten completion of the Wonder by buying it. Caravan contributions to Wonder of the World construction tend to be minor, although if you can produce a large volume of caravans and move them constantly to the Wonder site, the situation is improved somewhat.

TRADERS FROM BEYOND

This is one of the trickiest aspects of *Sid Meier's Civilization,* and one aspect over which you have little or no control. Traders from other civilizations, you see, are invisible within the context of the game. You don't see them, cannot interdict their progress, nor control their access to your cities.

Yet they are there. You must live with their presence, and do what you can to mitigate their effect.

How do you combat an unseen enemy?

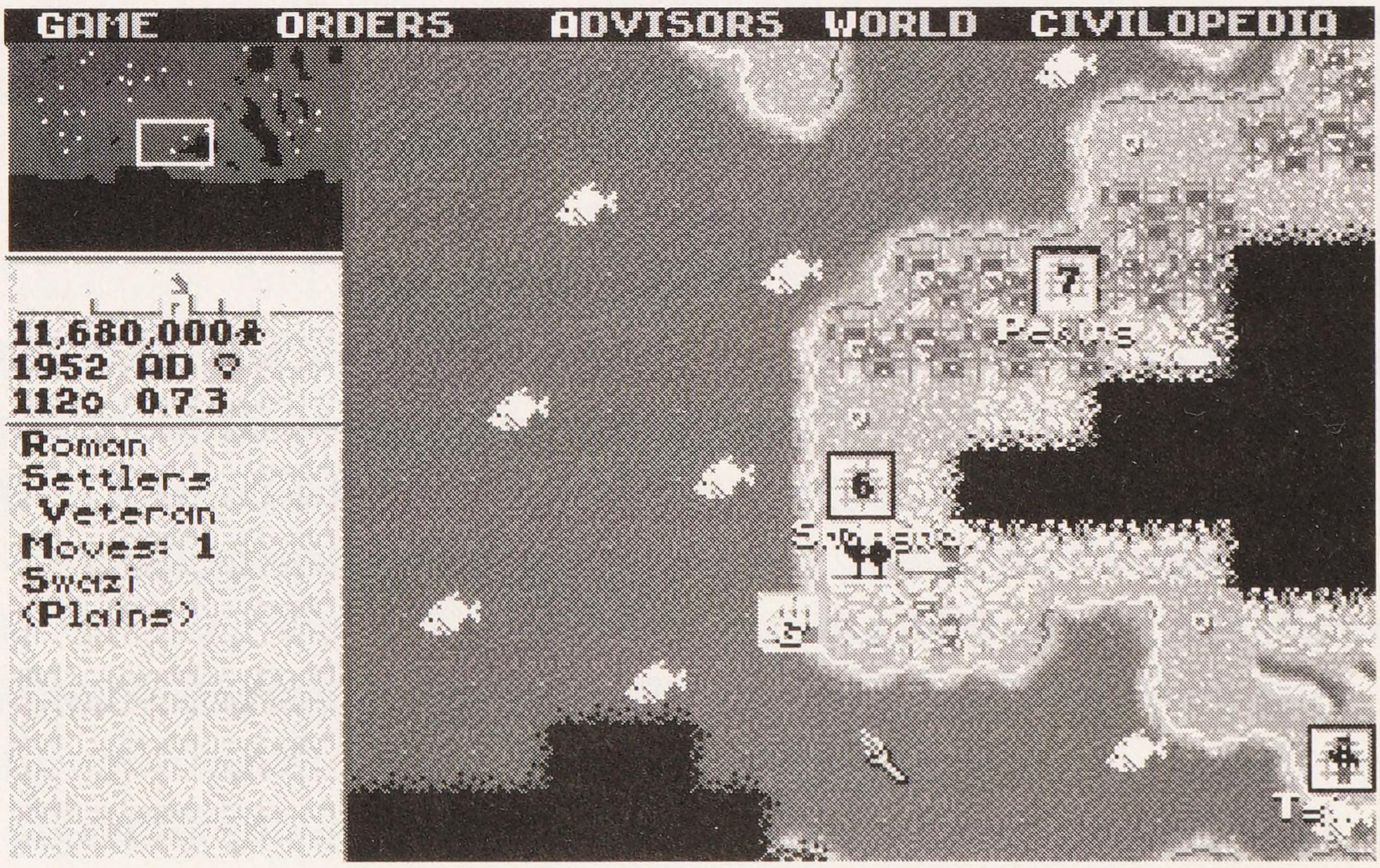
One thing you can do is use diplomats to investigate enemy cities in search of those that are producing caravan units. When you find them, use additional diplomats to sabotage production or

dispatch a military force to conquer the city. This is time-consuming—it may take far longer to produce and move into place a diplomat than for the enemy to produce and dispatch its caravans—but it's about the only way to interdict enemy caravans on land.

Naturally you should seek to sink any enemy ship you encounter: It might be carrying caravans to your shores. Waging war against enemy shipping has a direct economic, as well as military, effect on the enemy civilization.

(Enemy caravans are, by the way, another good argument for establishing a city on enemy territory as quickly as you can. By shoring up the city with military units brought from your homeland, you can apply the city's production to diplomat units almost from the start, using those units to target and interrupt the production of enemy caravans.)

INDUSTRIAL POLICIES



Load your caravans at the highest-numbered cities you can find. These will generate the most income from trade.

The surest—although not necessarily the easiest—way to increase your cities' production of income is by building a vast industrial infrastructure. Mines, transportation systems, factories, and manufacturing plants all contribute to economic growth, giving you the resources you need to pay for your civilization's goals and ambitions.

There are tradeoffs, to be sure, and as your civilization grows more advanced, the tradeoffs grow larger, with consequences that can be devastating.

The largest of these tradeoffs is the impact of your civilization on the environment. As your civilization reaches the stage of large-scale industry, pollution becomes a factor with which you must contend. Not only does pollution increase levels of discontent within your cities, it also lessens your overall civilization score. Worse, if pollution gets too far out of control, you can place your entire infrastructure at risk. Global warming exerts a dramatic and devastating effect on the planet in this game—as it seems to be on our own real world—and its effects are not easily undone.

There are several steps you can take to minimize the impact of your industries on your planet.

First, seek to invest in and construct environmentally benign technologies. Hydroelectric power is key among these. Power your civilization with water, rather than burn fossil fuels or split atoms, and you run less risk of polluting the world.

Try to develop and institute other benign technologies such as mass transit and recycling. These reduce the chances of pollution, but can be quite expensive to maintain.

Finally, keep plenty of settler units on hand to clean up pollution squares as they appear. It's easier—and far better for your civilization's health—to pursue industrial policies that avoid pollution in the first place, but if you can't do that, you should be prepared to deal with the consequences of your industrial profligacy as quickly as possible.

The Economics of War

One fights when one has to in this game, or one fights because one seeks global domination. Either way, the wise leader launches a war only when she or he possesses a treasury well-prepared to bear the costs of waging it.

Everything in *Sid Meier's Civilization* has a price, and the price of war is among the steepest. Few other situations in the game offer you the opportunity to lose so many costly units so quickly. (The explosive decompression of your economy, as we'll see below, is about the only similar opportunity to lose a lot of units quickly—and even then, the situation tends to stabilize, giving you a chance to get your income back on track. Economic crises are at least potentially under your control. In a war, the other guy can come after you and keep on destroying your units.)

Because of this, you should never initiate a war unless you're prepared to see it through, and a good part of that preparation must of necessity be economic. Make sure your trade routes are in good order, and don't be too quick to undertake campaigns against cities with which you enjoy a healthy commercial relationship.

Watch your treasury especially closely, indexing it to the cost of military units in the cities you'll be depending on for the production of reinforcements. If your treasury declines too far, you might consider seeking to make peace, at least temporarily, giving you time to shore up the economic foundations of your civilization.

Above all, be certain that the cost of war does not affect the cost of maintaining your cities' improvements. Pay as you go is the rule for city maintenances, and no military campaign is worth the collapse of slowly and carefully built cities. Be sure you can cover your costs at home before undertaking adventures elsewhere.

Economic Warfare

You can wage economic warfare on your opponents as well as overt military campaigns. There are several ways to do this.

As we've seen above, your diplomat units can be especially effective economic tools, sabotaging production inside enemy cities. Gather information on those cities first and use the diplomats to sabotage targets such as caravans, marketplace construction, and so on, as well as to interrupt the production of military units.

Effective blockades also serve military ends, both by interrupting the movement of enemy caravans, as well as by sinking costly ships and their cargoes.

Still another form of economic warfare occurs on enemy territory. You can use units to pillage the enemy landscape, destroying terrain improvements. Pillaging can be especially effective during sieges. Destroy a city's ability to feed its people and that city will soon fall to your forces.

There is an important economic consequence to consider here, however. Because you are seeking to capture enemy cities and put the productive capacity of those cities to work for your own ends, you should not be too quick to wipe out all of the terrain improvements. You will only have to rebuild them once you take possession of the city in question. Give careful thought to pillaging before you lay too much waste to lands that are going to fall under your dominion.

Finally, there is a hidden economic strategy that, while you can't plan for it, can nonetheless be quite effective. That's the acquisition of an enemy city by siege, rather than conquest. Encircle an enemy city and cut it off from its civilization. Then wait. Occasionally the city's residents will express admiration for *you* and your civilization, defecting to your cause, to your benefit and the enemy's economic loss.

Recession ... Or Worse

Everything seems to be running smoothly. Your civilization is prosperous and expansive. Your military campaigns are going well. Global conquest is, if not within your grasp, at least within sight.

Suddenly, though, you begin to have economic problems. The production of military units slows down. Cities begin to fall into disorder. Your treasury, rather than growing, begins to shrink.

There's a recession on.

What's causing it? It could be several things. The wars you're waging require that you send a lot of units to remote locations. This costs money each turn. Check to see if any of those units can be reassigned to newly captured cities, relieving some of the maintenance burden on cities in your homeland. Disband any remote units no longer necessary to your campaign.

Additionally, some of your larger cities may by now have quite a maintenance tab each turn. Examine the city map to see if income production can be boosted through rearrangement of the labor force.

Recession is one of those times when you should consider introducing a taxman into critical cities, but only after ensuring that his creation won't result in loss of foodstuffs necessary for your population.

If enough cities fall into disarray, you could be risking your far-flung forces: If the cities can't support them, they'll be disbanded. Introduce entertainer specialists into cities experiencing civil disorder.

If necessary, consider selling off some city improvements in order to boost your treasury. Try to restrict those sales to items whose usefulness will soon be superseded: Sell factories, for example, if your civilization is about to develop the capability of building manufacturing plants.

All of your temporary fixes—specialists, sell-offs of improvements—must be supported by longer-range economic planning.

Perhaps you should consider reverting to a more primitive form of government, one whose authoritarianism imposes more rigor and less freedom on the citizens, making them less vocal in their discontent. (Less-advanced governments, though, also result in less-productive cities.)

You might wish to adjust the overall balance of your tax structure, perhaps decreasing the amount devoted to scientific research and boosting the amount flowing into the general revenue. This approach will slow down the pace of civilization advances, and may cripple your progress in relation to that of other civilizations.

One of the best approaches is to review all of your trade routes. Have new, larger foreign cities been discovered since the routes were established? Are all of your routes generating as much income as possible? It might be that you should shift production to caravans for a time, seeking through trade to heal your ailing economy.

Finally, review the locations of your strongest military forces. If they are in position, you can mount full-scale rapid campaigns of conquest against the largest enemy cities, hoping to gut their treasuries through takeovers, boosting your own with the booty you seize.

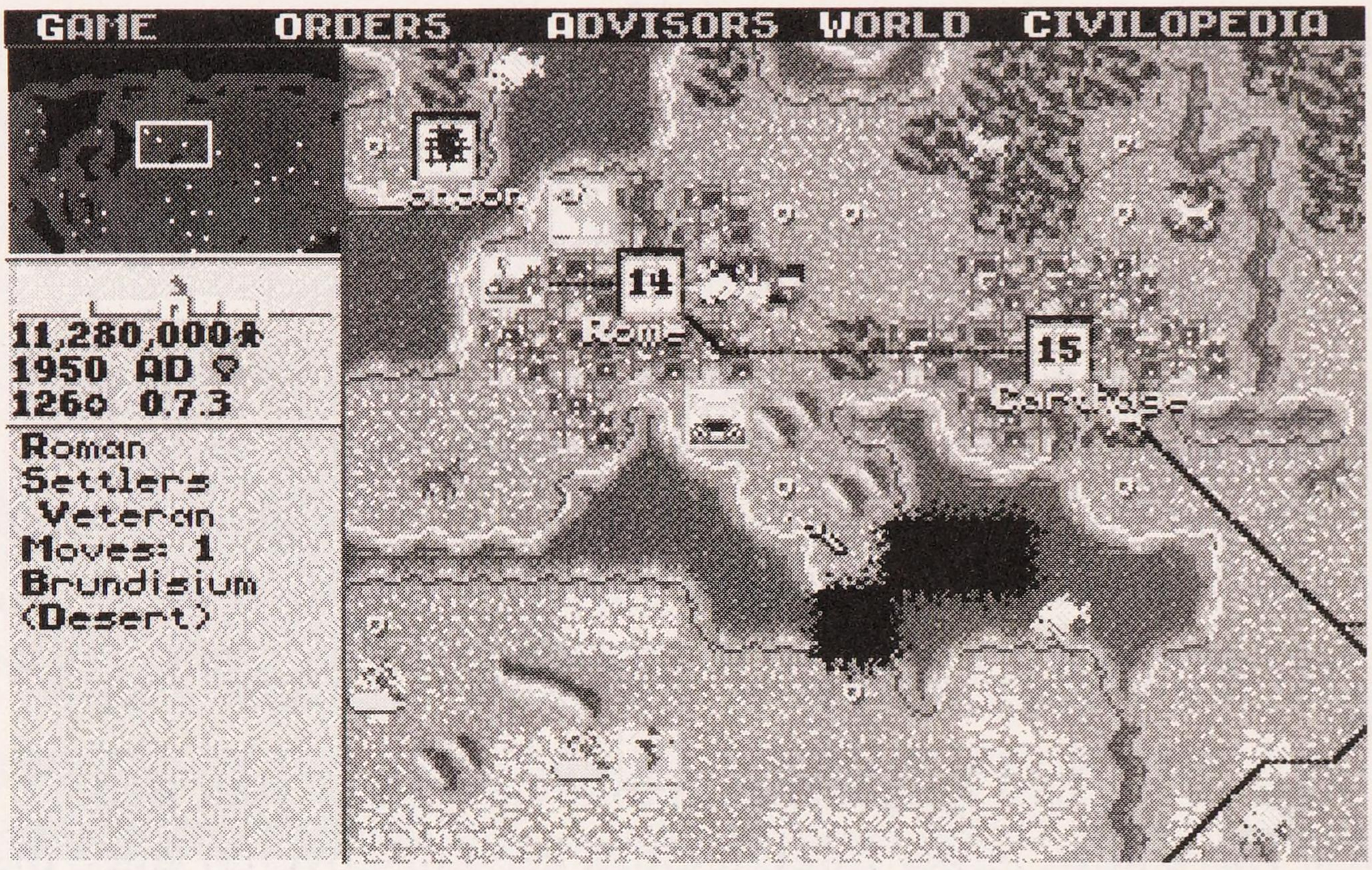
Remember, though, each city you capture adds its own demands to your economy, as well as makes its own contributions.

LEADERSHIP: QUESTIONS OF GOVERNMENT

Which brings us to the central question in *Sid Meier's Civilization:* government itself.

The nature of your government is one of the larger questions in *Sid Meier's Civilization,* yet will be treated only briefly here. Government, like riding a bicycle, can be learned only by experience, not example. You will derive that experience only by playing the game.

O Chapter 8



As our civilization grows, you may find yourself ruling over a far-flung network of cities linked by rail and sea

At first you'll stick to the simplest type of government to run: despotism. As a despot you impose your wishes on your population, and they follow your lead—not blindly, and not without some resistance, but they do follow.

Despots, however, rarely rack up large scores. Additionally, production under despots is limited; cities don't grow as fast or as large as they can under more advanced forms of government. Despotism is the default form of government, but one you must outgrow if your civilization is to thrive.

Monarchies and communist dictatorships offer certain advantages while maintaining certain kinships to despotism. Your people are a mite freer, although you can still impose your will on them. Production is boosted slightly and, under communism, corruption is reduced.

The most free of all the forms of government also impose the greatest disciplines upon you as the leader of civilization: These are the Republic and the Democracy.

Representative government offers you the best chance of earning a high civilization score for quality of life among your citizens, but also give you the least chance of achieving victory

through conquest of the world. Under a Republic, for example, your citizens accept foreign peace treaties no matter how militaristic *you* might feel. Under Democracy, your people get *very* unhappy *very* quickly when military units leave their home cities.

You should, then, have your domestic houses in order before undertaking to rule a republic or a democracy. Bring home your military units. Give up your dreams of world conquest. Satisfy yourself with ruling for your people's needs rather than your own desires.

Or go back to being a tyrant. It's simpler, but ultimately less rewarding.

The Nuclear Dilemma

Finally we come to the largest of questions faced by our modern governments, and one of the largest you'll face while playing *Sid Meier's Civilization:* the challenge of managing nuclear weapons.

Few moments during the playing of the game can be quite as startling as your first encounter with a nuclear power. "Our words are backed by Nuclear Weapons!" is a message that must be carefully and warily heeded. Nuclear powers can unleash weapons of horrifying destructive capacity, wiping out cities and distributing the vilest of pollutants across the landscape.

You should be aware that it's fairly rare for an enemy to launch a nuclear attack against you. It does happen, atomic fire raining down with terrifying effects, but it does not happen often.

The temptation may be different for you, especially if the tide of war is not going well. Nuclear weapons can shift that tide, and shift it over long distances: Their range is the longest of any military unit in the game. Their effects are likewise unequalled.

Those effects transcend the strategic and tactical. Use of nuclear weapons hastens the world toward global warming and polar melting, causing the spread of pollution at a rate far beyond that of industrial effluent. If you use nuclear weapons you should have plenty of settler units in readiness to clean up the mess.

You may not be able to clean up the mess their use causes your score. Nuclear weapons use, and the pollution it spreads, exerts only a negative influence on your score, subtracting points from those you've achieved.

When you think about it, that's hardly enough punishment for what nuclear weapons use represents. In the game, as in our world, nuclear warheads are best employed as deterrents, never as tools.

Chapter Nine

A World at War

Chapter Nine

A World at War

Earlier we looked at the fundamentals of warmaking in *Sid Meier's Civilization*. We focused on ancient wars, those early conflagrations of expansion and consolidation. Here, we look at larger wars, global conflicts in which you will be fighting on several fronts across the entire surface of the planet.

You will want, at least once in awhile, to take a global-conquest approach to the game. One way, although not necessarily the best or most efficient way, to win at *Sid Meier's Civilization* is by conquering the entire planet. While the game's manual implies that world conquest is the ultimate goal of *Civilization,* and the scorekeeping process reflects this, I think that the game's dynamics really imply other goals—world peace, care of the environment, economic growth, civil liberties—as more desirable. World conquest, though, does provide a large scoring bonus when it's accomplished, so it is, indeed, an approach you'll want to try.

And that, like so much else in this rich and complex game, is easier said than done.

Make Your Decision

It's one thing to decide to play *Sid Meier's Civilization* as a game of global conquest. It's quite another to conquer the entire world. To do so, you need to decide early on that world conquest is your single goal. That decided, every turn must include decisions and actions aimed at making your plan a reality.

You'll need a continental base from the very beginning. While you can win the game if you start on an island, it's very difficult to conquer the world from an island home. As a rule, when your initial position is an island, you have that island to yourself, and must develop seafaring capability before encountering other civilizations. That takes time, during which other civilizations based on continents can more rapidly and thoroughly expand their own holdings to the point at which, when you finally make contact with them, they may be a good bit larger than you. If you find yourself on an island during the first turn, you should consider either altering your world-conquering dreams, or starting the game again in hopes of getting a better opening position.

If you *are* on a continent, world conquest is a likelier option. Even so, it will take a steady hand and a good bit of nerve, and you must exercise those qualities from your very first turn.

The steady hand applies to managing your cities and your initial expansion. That expansion must come rapidly. You will need plenty of resources and reinforcements in order to achieve global domination. That means violating some of the principles established earlier in the book.

You probably should not wait, for example, until you have a couple of defensive units in your first city before beginning serious exploration of your world. Build and fortify a single militia, following it with two more militia units who will be immediately dispatched to map the world. These units will reveal whether or not your location is an island or a continent.

As soon as your second explorer is dispatched, begin building your next band of settlers. If you can hasten their construction with money, do so. You have to quickly get another band of settlers into the game in order to develop a couple of resource squares proximate to your capitol so as to boost its production. Don't spend your time developing every square: That can wait. As soon as two resource squares are developed, move the settler unit to the site you've already selected for your second city. Create that city and repeat the process, building another group of settlers as rapidly as you are able. You should have three functioning cities by the end of the first millennium or so of game time.

Once your capitol has created its first band of settlers, spend a few turns on security. Now's the time to build additional defensive units, as well as the all-important barracks improvement. Because your first city can produce units faster, use it and its barracks to generate the defensive units for your second and subsequent cities, moving them to their new homes and reassigning them there immediately upon arrival. This approach frees the productive time and energies of new cities for the generation of settlers, barracks, and other improvements that will serve your goals of conquest.

Get some cities built as close to the potential battlefronts as possible. You'll appreciate the increased access to the war that these cities offer. Because they are close to the front, you should invest a bit more heavily in their security during the first few turns after their creation. After all, the enemy may launch a surprise attack, violating the treaty before you have a chance to. Should that happen, you want to be able to stave off his conquest of your civilization.

(Cities close to the front can also serve important functions at later stages of the game. These are the cities where you can base aircraft and other units that have to be returned to a friendly city at the end of their turns. As you develop airborne warfare capabilities, be sure you have in position sufficient cities at appropriate

locations and distances to allow your safe landing when bombing and strafing missions are ended.)

Use cities close to the front for production of units with more limited movement capacity. Diplomats, for example, can move quite a few units each turn depending upon terrain and other conditions, and so can be produced farther behind the lines. Catapults and legions, on the other hand, are quite limited in their ability to move. By producing them at the front or near it, you can shear off several turns' time in getting them into battle. Those turns may prove decisive.

Finally, well-protected cities near the front can serve as staging areas where your forces can be concentrated as they mass for outright assault against enemy lines. Since you've made the decision to conquer the world, you must support that decision with forward bases from which your troops will attack.

Be careful, though, about reassigning too many units to new cities. The troops must be supported each turn, and it may be that their city of creation—or another, better-established city farther behind the lines—can better support them long-distance than can a new city nearby.

SECURITY BEGINS AT ...

You have established three or four cities and made contact with the two civilizations that share your continental landmass. Treaties are in force with both civilizations, and embassies have been established. Now is the time to begin your buildup for wars of conquest.

The first step toward global conquest is to ensure your security at home. You will not be investing as much time or money in the process as in a game where you are playing for the highest score, or to be the first to reach the stars, but there are nonetheless some defensive matters to which you simply must attend. If nothing else, bear in mind that the tide of war can flow both ways: Your grand campaign may turn into a rout.

Upgrade the defensive units in each of your cities, using the new production as an opportunity to move more primitive units to the front. Place those units on fortification duty along your borders with other civilizations, sealing off any holes through which enemy forces, diplomats, or settlers might slip.

You should consider investing in defensive improvements in your home cities, building city walls if possible. Because of the time involved in building these, though, your best bet is to buy them—if you can afford the price.

Just as important—and perhaps more important over the long run—are domestic and economic improvements aimed at boosting your people's productivity and, not incidentally, their levels of contentment and satisfaction. War is expensive, and your people have to pay its price—give them the tools to do so.

That means, at the very least, building a granary and a marketplace in every city you control. If you have the time and can afford it, a temple will further enhance your control over your population.

Above all, build more settlers. Develop the resources surrounding each of your cities, boosting income and building the financial warchest you'll need once the campaign begins in earnest. Now, too, is the time to apply the energies of a band of settlers or two to building roads between your cities, and, even more importantly, building roads to the fronts where your campaigns will be waged. When the war does begin, the presence of roads over which you can quickly move fresh troops may prove to be the deciding factor in your victory.

The existence of additional settler units will also allow you quickly to create additional cities as prime locations become available or as settlers complete the development of terrain around existing cities. Be bold when expanding your civilization's number of cities. As you can see by reviewing games that you have lost, those civilizations that most quickly conquer the world are those that most quickly establish and grow the largest number of cities a continent or island can support.

When thinking of the security of your home as you embark on your campaign of continental and then global conquest, don't neglect offshore questions. Because you are going to concentrate first on your home landmass, you may defer for a time the development of seafaring capability. You won't need ships right away.

Except: Civilizations located elsewhere are probably not deferring their own development of triremes and more advanced shipping capability. This could come back to haunt you, should they achieve dramatic or overwhelming control of the seas.

To avoid this development, there are a few steps you should consider. During your initial exploration of your coastline you may have discovered nearby landmasses separated from you by a single square. As we discussed earlier, post a primitive unit—militia will do just fine—on sentry or fortification duty at these spots. Guarding the narrows between landmasses serves to give warning of adversaries who approach by sea along these routes.

Should these offshore civilizations land troops on your continent, your picket may be able to establish a treaty with their representatives. Your task then becomes freeing up sufficient units to contain the newly landed units and keeping the enemy from establishing too strong a presence on your continent.

The northernmost and southernmost points under your control should also be garrisoned with a picket, as should any peninsulas jutting far out into the sea. Protect yourself against unexpected enemy landfalls.

As you develop seafaring capabilities of your own, use them to post sentry ships at strategic points. As discussed in an earlier chapter, this approach can help ensure the security of your homeland, leaving you free to concentrate on its conquest before you begin an amphibious expansion.

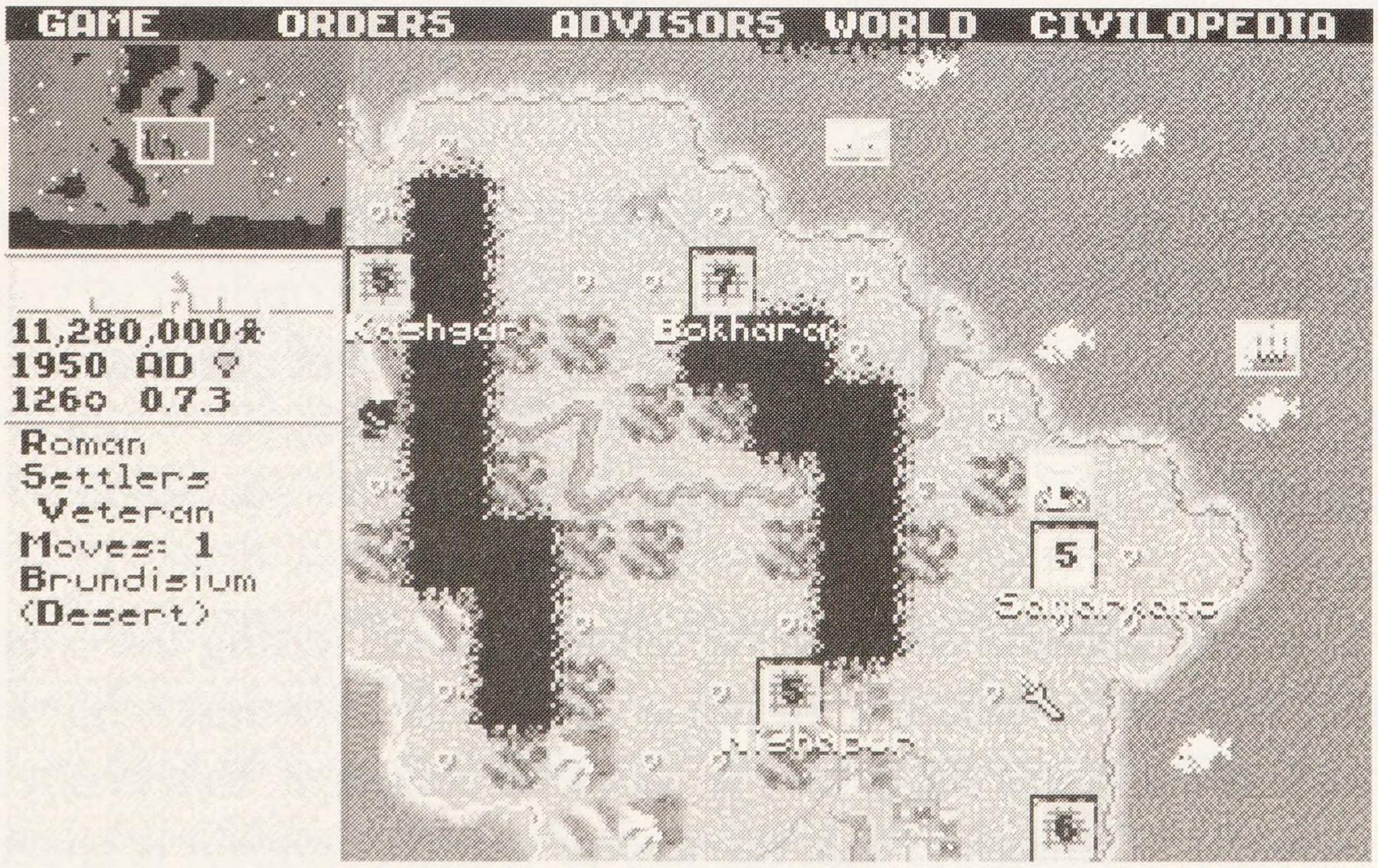
When you're going for world domination, your sentry ships serve an even greater strategic purpose. You are out to contain the enemy, cripple her or his shipping, preventing any expansion of other civilizations. If you have the money and resources, move your chokepoints closer and closer to enemy territory.

Ultimately, if you manage your resources wisely and enjoy a little luck, you'll be able to contain the enemy at his homeland, blockading his ports and keeping him sealed up until you can land forces of your own on his territory.

Keep Your Options Open

An important key to the conquest of your home continent, from which will flow your forces for conquering the world, is your initial exploration of the landmass. Explorers are more important than ever when you take a conqueror's approach to the game. You must use them wisely, risking them only if you can't avoid it.

Serendipity squares, for example, should be approached more cautiously, especially at the game's higher-difficulty levels. While their benefits can be great—particularly if you uncover scrolls of wisdom that provide a civilization advance, or advanced tribes who give you immediate possession of a new city—so can the risks. Barbarians lurking beneath serendipity squares can easily eliminate one of your precious explorers. You can't afford to lose a unit to "serendipity."



A well-developed rail system increases productivity as well as makes it easier for you to move units over long distances.

Worse than that, you may be risking a city: Remember that in order to explore your continent and quickly establish new cities, you are running with lower-than-usual defensive levels during the first few centuries of game time. Barbarians from beneath a serendipity square may make their way to your vulnerable capitol. Locate the serendipity squares on your landmass, but consider leaving them undisturbed until you can approach them with the luxury of more powerful, veteran units better able to deal with barbarians should they appear.

The same sort of caution should apply when you first make contact with another civilization. Your goal during your first millennium is to locate other civilizations, contain them if possible, but also to avoid conflict until you unquestionably have the upper hand. (Or at least a solidly justifiable "fighting chance" of total victory.) The militia units you dispatch on exploration missions during your first few turns are hardly well-equipped to fight a war. They can, however, strike treaties and contain enemy forces.

When your militia first encounters another civilization, take advantage of the opportunity to talk with that civilization's leader. If a treaty is offered, accept it. Study the terrain to see if you can position your militia in such a way as to contain the other civilization's expansion, preserving as much of your own territory as you can.

Treaties work both ways, and can be violated by either side. This is an important point, bearing directly on the options at your disposal. It is not unusual to find yourself the target of a sneak attack by a civilization with which you have enjoyed a longstanding treaty. When this happens you have a couple of options.

You can respond with overwhelming force, letting the enemy in effect choose the point at which your war of conquest begins. If you possess the force necessary to achieve conquest, this is not a bad response. Remember that the key to world conquest is speed—

the earlier you eliminate all other civilizations, the higher your score.

If you're weaker than the enemy, though, you have some things to consider. Suppose, completely out of the blue, your picket is destroyed by a military unit of an order far in advance of your own technology. It's unlikely that you'll be able to defeat such forces. You may choose, then, to seek another treaty during whose tenure you can endeavor to catch up with the enemy's technology.

You may also decide that world conquest is not a likely opportunity during this particular game. While that's a painful decision, it's also a pragmatic one, and is a decision you should keep available at all times. Knowing when to back off is an important key to staying alive to fight another day—or pursuing more peaceful paths to winning the game. As the leader of your civilization, your job is to be *wise* as well as aggressive.

Choose Your Enemies

During the game's first few millennia you may not wish to fight on more than one front at once. Deal with one of the civilizations sharing your landmass before launching a war against the other.

How do you know which one to attack first? Your diplomats can be of great help in answering that question.

Study the nature of the civilizations bordering yours. Some may be quite small: easy targets, as it were. Others may be far more powerful, potential world conquerors themselves, with cities protected by strong walls and large numbers of pickets posted along the same borders you're guarding.

The temptation is to go for the easy target, putting off the larger enemy until later. This is, more often than not, a mistake. The weaker nation, particularly if it's well contained and has few opportunities for expansion, is unlikely ever to pose a large threat to your civilization and may, indeed, become a valuable source of

technology you can steal. Its cities may also serve as trading-route destinations for your caravans.

The stronger neighbor, though, is already a de facto threat to your civilization, and each turn you allow it to grow places you at greater and greater risk. Deal with strong neighbors as quickly as you can, and your plans for ruling the world will be that much closer to realization.

YOUR FIRST CAMPAIGN

You feel confident that your heartland is well guarded, with pickets posted at outlying areas. You've built roads to the two fronts where other civilizations share your continents. One of those civilizations has only two cities, with limited and primitive military resources. The other civilization has five cities and a large army roughly equal to your own; your technology levels are likewise similar. That civilization is your target. It's time to begin your first campaign.

THE LESSONS OF HISTORY

Many have tried, none has succeeded. The siren song of world conquest has called to Alexander, Caesar, Napoleon, and Hitler, yet each was stopped short of his goal.

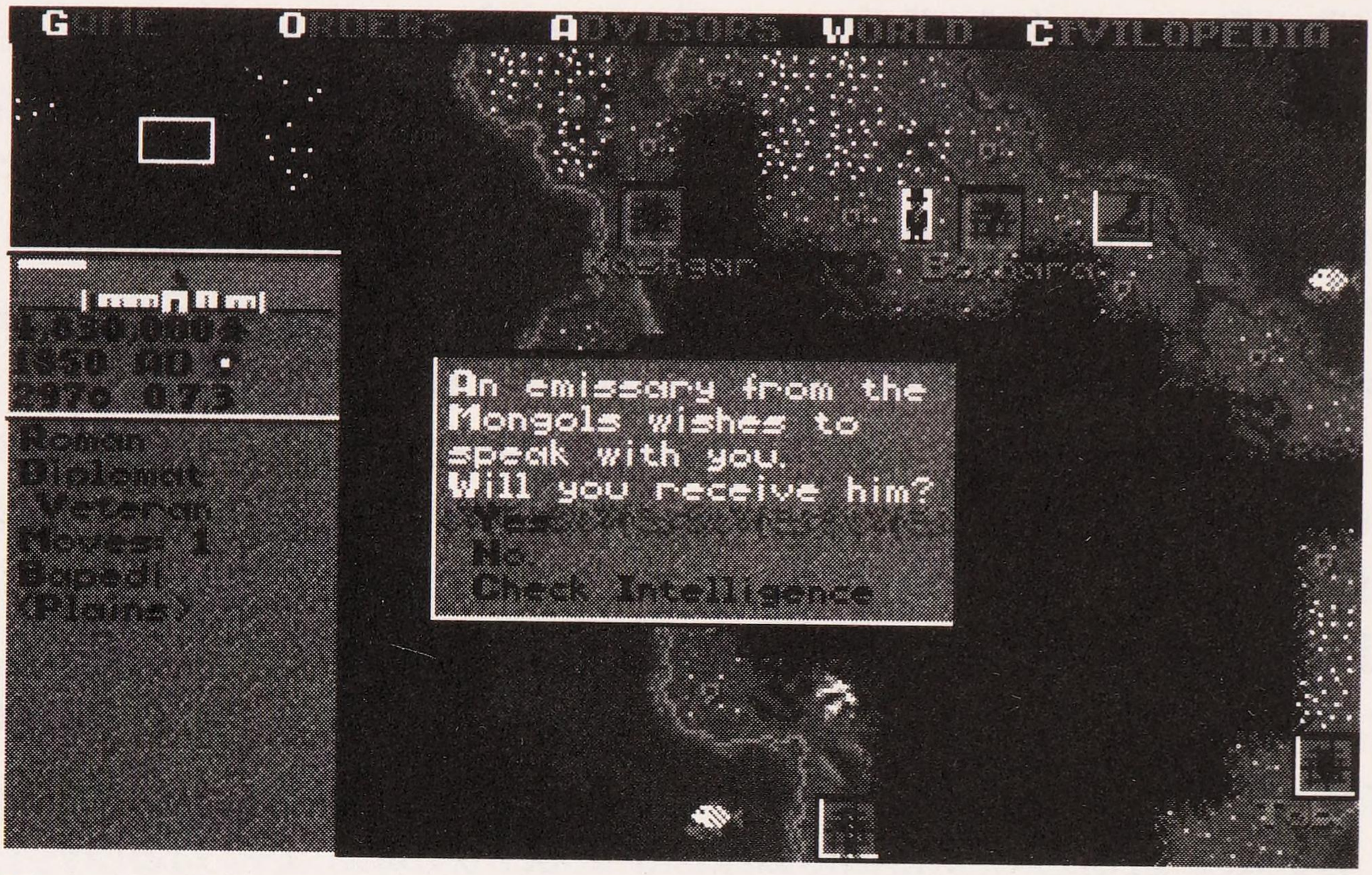
A few centuries into your plan of conquest you will probably understand, more clearly than ever, why: World conquest is a logistical nightmare, an economic morass, and a cause best supported—if that's the word—by citizens under the thumb of a despot. If you can manage to wage a campaign of world domination while maintaining a strong, democratic government, you might consider making a stab at the project in the real world.

The first step is building your army of conquest. Naturally this should consist of your strongest offensive units, but should not be composed solely of those units, at least during the early millennia of game time. The strongest units available to you may have limitations on their movement capacity, a vulnerability that can come back to haunt you in the most painful of ways.

Consider the catapult, for example. Undoubtedly it possesses great offensive power, and will be indispensable when attacking fortified units behind city walls. But its movement across undeveloped territory is limited to one square per turn, which can leave the unit at great risk should its single move bring it into contact with a strong offensive enemy unit.

Build a group of mobile units and send them into enemy territory in advance of your big guns. Chariots and cavalry are good units for this purpose in the early stages of the game, knights during the midgame, armor and mechanized infantry during the endgame. (Aircraft are even better during the final stages; with their long range and mobility they can locate several enemy units per turn, and possibly destroy large concentrations of units stacked in wait for you. The devastating strategic and tactical effects aircraft have exerted on modern warfare are well represented in *Sid Meier's Civilization*.)

Your mobile units can clear safe paths for you to move your assault units into position to lay siege to enemy cities. This type of "blitzkrieg" attack can prove terrifically effective, especially if the enemy has made the mistake of stacking units outside the protection of city walls.



Use your diplomat units to open negotiations with neighboring civilizations.

Another valuable option is the use of diplomats as your advance force. They not only enjoy greater freedom of movement and can deliver vital information, they can also be used to bribe enemy units to join your side, assuming your treasury can support this expensive proposition. Additionally, larger cities in your homeland may be able to pump out diplomats in quantity over a very few turns, letting you flood the continent with these flexible units. Don't forget their ability to sabotage enemy production, softening up opposing cities for the arrival of your assault troops.

Your diplomats can also help you target the cities you will attack first. There are a couple of effective approaches to this decision. Use your diplomats to determine the nature of each city's production. Your first targets should be those most capable of producing veteran military units: cities with barracks improvements in place. Next should come cities containing Wonders of the World, if any, although, like seats of learning, you may wish to let these cities stand, encircled, as sources of information and trade.

Because you are planning to leave a couple of enemy cities standing until the very last phases of the game, you should pick those cities early. *Under no circumstances should one of those*

cities be a harbor! Don't leave the enemy a back door through which he can escape to expand once more. Contain the enemy civilization, use its remaining cities for your own ends, and destroy or conquer them in the final stages of the game.

Sabotage, Espionage, and Other Dirty Tricks

Even as you strive to secure control of your home continent, other civilizations are seeking dominance over their own islands and continents. You will be approaching these civilizations from sea, making amphibious assaults against islands and continents that have had millennia to entrench themselves and prepare their defenses against your arrival. Your best strategy is to put off total assault until after you've done as much softening up of their defenses as you can.

In fact, even the softening-up activities might best be postponed for awhile. Your first duty, as a responsible leader of a civilization in pursuit of world conquest, is to build resources for the assault, and to gather information about what your forces will face. The information can be gathered not only by your diplomats, but also by your caravans.

The advantage of using caravans to obtain portraits of the interiors of other civilizations is that they do so while helping to build your war chest. Seek first to establish treaties with the other civilization, even though you plan ultimately to obliterate them.

The treaty serves to guarantee your caravans and diplomats free passage through enemy territory. You can prowl around *all* of the other civilization's cities, in search not only of larger cities which will deliver higher trade revenues, but also for indications of more heavily defended cities, concentrations of military units, and so on. This sort of information will evolve from turn to turn, with mobile units shifting position, but can nonetheless give you a more

thorough understanding of the degree of opposition your own military units will face when your invasion gets under way.

You should also keep an eye out for landing sites and staging areas for the actual invasion. Try to locate those areas closest to your immediate military targets, the cities and facilities you will be going after first. Look for infrastructure items such as roads that you can use to military advantage.

An especially effective tactic is to locate and occupy islands off the coast of the enemy mainland. Cities on these islands can be used to produce diplomats who can reach the enemy more quickly than those from your own homeland. The island cities can also serve as safe landing areas for bombers, fighters, and missiles during later stages of the game.

Island-hopping, in fact, can be as important to your victory in *Civilization* as it was during the World War II. Map your world carefully and pick those targets that best serve your long-term strategic goals.

Your main focus, obviously, will be enemy-led continents. Once you've succeeded in mapping the interior of the enemy civilization, establish trade routes using your caravans, striking the most lucrative routes with the largest cities first.

During this phase of the game you'll also want to use your diplomats to gather information about the enemy's cities, their defensive capabilities and the resources they possess. Investigate every city you can, starting with those you'll be attacking first. (These are probably the ones lacking city walls, and thus more easily captured.)

Your diplomats should also make an extra effort to obtain a picture of the enemy's capitol. As you pursue conquest of the world, there are special advantages to be obtained by capturing the enemy's seat of government.

Go for the Capitol

You're making your big move, landing large numbers of military units and diplomats on foreign shores. The enemy has conquered a continent of his own, possessing close to a dozen cities. On the other hand, you've established and maintained a successful blockade of all the enemy's ports, effectively containing the enemy's expansion plans. Naval bombardment has weakened coastal cities. Your invasion fleet has moved safely into position. You land your forces with only minimal casualties.

While you feel confident of your military technology and the size of your forces, you'd feel even better if you had an edge. Capturing the enemy capitol can give you that edge.

A couple of things happen when you take an enemy capitol. First, and perhaps most important, you throw the enemy government into disarray and civil war, splitting the enemy civilization into two separate nations. As a result, you may be able to strike a truly separate peace with one of the nations, increasing your ability to achieve a swift and total victory over the other civilization.

Capitols also tend to be quite valuable cities, with plenty of resources and improvements in place, making them valuable additions to your own civilization's economy.

A further advantage to the capitol-capture approach comes if the enemy has developed spaceflight capacity and is building or has launched a starship. Should that starship reach Alpha Centauri safely, the game ends, no matter how close you are to total conquest or how many civilization points you've added to your score. Capturing the enemy's capitol forces an immediate recall of the starship.

You will also have to garrison the newly captured capitol—or any newly captured city—with sufficient forces to hold it against recapture attempts that will undoubtedly be mounted. The best approach here is to move in troops from outside the capitol, reassigning them to the newly acquired city. Because its capture has

thrown the capitol and its population into disorder, your first construction projects should be those aimed at quieting the populace: Temples, cathedrals, and coliseums are good choices here. Don't forget to build barracks and granary facilities if the city lacks these basics.

The capitol under control, you can proceed with your plan of continental conquest and consolidation, bearing in mind that you don't have to kill everyone, nor destroy every city—at least not until *you're* ready.

Some enemies are simply intractable. No matter how thoroughly they are beaten on field of battle, they keep coming back for more, often making ludicrous demands for tribute when they do. Unless there is an overwhelming reason not to eliminate these annoyances from the world completely—a valuable trading city, for example—you should proceed posthaste with their destruction rather than waste too much time with them.

Mopping Up

Having broken the backs of all the other civilizations, and completely eliminated those that are inarguably warlike, you will approach your goal of a world completely under your control. It's time to undertake the final eradication of your enemies.

Again, you'll want to deal with them in sequence, saving for last those who serve as your most valued trading partners. Because of the huge investment in military units sent to remote locations, the economic demands on your civilization each turn are large, and you will need to preserve until the very end all the income you can. Surround those cities from which you derive trade funds, but have in position the forces you need to obliterate them when the time comes.

Otherwise, any enemy city on the planet is fair game. Keep an eye on your information sources as well as the world map. Be alert for any unexplored areas of the globe. While you have probably

explored most of the world, even a small, hidden island can serve as home to an enemy city or two. Locating that island, after everything else on the screen has been defeated, can take valuable turns, lessening your achievement—and your score.

And when the enemy *is* completely eliminated and yours is the only civilization in existence, take time to examine that final score. What is the percentage of happy or content citizens in your civilization? How many Wonders did you manage to create? Could your score have been even higher had you taken a different approach?

These and other questions are best answered the next time you take on the challenge of conquering the world. Put your lessons to work and add new challenges. Try to achieve the goal under more liberal forms of government. Seek to raise your people's standard of living to the highest possible level, even as you keep your cities on military footings. Attempt to boost the aesthetic and spiritual sides of your civilization without lessening your warmaking ability.

It won't be easy—but, then, conquering the world never is.

Chapter 10

A World at Peace

VOLTAIRE
CHEFS-D'ŒUVRE

Chapter 10

A World at Peace

It can be argued that at the heart of *Sid Meier's Civilization* lies a frustrated—and frustrating!—utopia generator. Certainly the best, or at least the most challenging, way to run up a high score would seem to be through the creation and maintenance of a high level of peaceful, wonder-filled, happy, spiritual, wealthy, environmentally benign, spacefaring civilization. Is that all?

The deck, you must understand, is stacked against you, as in any worthwhile game. One of the arts of strategy game design is, in fact, precisely that stacking of the deck. You must make a lot of effort on a lot of levels in order to weave your way around the built-in pitfalls and booby traps designed to challenge you.

Civilization contains more than its share of pitfalls, but so does civilized life on this earth. The concept of the tradeoff can be found close to the center of every advance our species has made, and it's there in the game as well. What you gain must be weighed against what you lose as you make progress. In some cases you must be ready to compromise your most highly held principles, at least for a time, in order simply to stay in the game.

But those principles—peace, education, a light hand on the planet—can be used to achieve great success and even ultimate victory. Just remember that it won't be easy.

The Gentle Way

As when playing a game of conquest, you should make your decision early, building all subsequent decisions around your chosen goal of winning the game along peaceful routes. And, also as in conquest-oriented games, keep your options wide open: Peace may not be an effective path, as revealed by circumstances that evolve along with the game. Besides, you may find that you develop a taste for aggression, however benign your original intent.

Nor will you be able to avoid war altogether. Many of the units in this game are military in nature for a reason. Aggression is built into many of your opponents, and is the absolute essence of some of the civilizations you will encounter. There are leaders in this game who live to fight, and nothing more. You must be prepared to deal with them on their terms for, with a very few special exceptions, there's little way to persuade them to deal on yours.

That understood, there are three fundamentals to winning a "gentle" game of *Civilization*:

1. You must be militarily strong, able to wipe out the intransigent, and build separate peaces with the other civilizations on your world.
2. Concentrate on financial institutions. Utopias can't be built, but some of their aspects can be bought in this game. You must build several financial power-house cities. This lets you build the Wonders of the World that are required for you to satisfy your people, earn bonus points, and reach the stars before anyone else.
3. Choose freedom. The more democratic your government, the harder it is to manage, but the better your final score will be.

Everything flows from these decisions. The first one, with its militaristic advice, will lead to a game which, over its first few

millennia, may play like a world conquest game. You have to seek out the unbendable aggressors and remove them from the world—or persuade other civilizations to help you do so.

Beyond that, you'll be making decisions a little differently than if you were playing for conquest, and that begins with the choice of units for exploration.

The Art of Diplomacy

If pursuing a peaceful world, you might consider using diplomats as your prime exploration units. There are several advantages to this.

First, diplomats possess higher levels of mobility than most units, letting you cover a lot of ground quickly.

Second, and more important, diplomats give you the flexibility you need in establishing relations with other civilizations in the game. Their ability to negotiate, establish embassies, look behind other cities' walls offers you a full palette of possibilities during the vital early stages of civilization growth.

Finally, and perhaps most important of all, your diplomats can wander through enemy civilizations at will, so long as there is a treaty in force. If you're going to win the world without totally destroying it, you'd better have a pretty good picture of the forces you're up against. The diplomats can give you this.

(Caravans also make good explorers in this sort of game, thanks to their ability to penetrate enemy borders. But caravans movement allotments are limited, nor do they offer the special talents of the diplomat.)

Speak Softly, But Carry ...

Just because you're committed to peaceful expansion and growth does not mean you can neglect your military development. In fact, those civilizations best able to grow with a minimum of armed conflict are also those best equipped to win battles should they occur.

To that end, build your barracks as quickly as you would in a game of military expansion. Create a substantial military force, concentrating on the strongest offensive units you can produce. Focusing upon units of great offensive power will in turn greatly enhance your defensive strength. As you expand the defensive perimeters of your civilization, your border forces will need teeth to enforce their will. And their will, quite simply, must be that *all other civilizations shall leave you alone.*

You must look more closely than ever at the impact of terrain on your borders. Perhaps the most effective location for a civilization seeking to win the game through world peace and interstellar colonization is a large island, capable of supporting seven or eight successful cities. Islands define their own borders quite nicely, forcing would-be conquerors to approach you from the sea, making the advantage yours.

If you are located on a continent, you have a couple of choices. You can carve out a civilization alongside others sharing the same landmass. You can wage a temporary, and with luck, brief war of extermination, conquering the entire landmass for your own. Or you can emigrate to another, more hospitable location which you can claim for your civilization alone. Each approach has its advantages; each carries risks.

Should you seek to strike treaties with neighboring civilizations, you must bear in mind that they can turn on you at any time. There is also the chance that they will leapfrog your own civilization, advancing beyond you in technology and wealth, either

conquering you altogether or turning you into a subservient, client state.

The path to continental conquest is equally risky. If you can achieve domination of the continent in a few centuries, you should do so, but watch the calendar as well. You may find yourself bogged down in an endless, expensive war that devours time you should be using to strengthen the foundations of your civilization.

Emigration carries perhaps the largest of risks, and is likely to be the most time-consuming of your undertakings. You have not only to find another landmass, but also to settle and exploit it, all while other civilizations are growing and expanding on their original turf. Your best bet, if taking this approach, is to solidify your base on your homeland, however unpromising it looks over the long term. Then, dispatch sailing vessels in groups of at least two, carrying at least two bands of settlers. Settle everything you come to, hoping that one of your new homes will turn out to be suited to your ambitions. The important thing is to establish a large number of cities, enabling you to expand until you find a location that can be more permanently and easily protected.

Fortress!

The ideal situation, of course, is to be located on a large island from the beginning of the game. That way you have natural borders, room to expand, and are better able to pursue an effective isolationist approach.

Colonize your island rapidly. Try to have four cities in thriving existence before the close of the game's second millennium. Ultimately you should have seven or eight functioning cities on the island, each reinforcing and supporting the others. Put two of your cities to producing Wonders of the World, the others to developing a strong defensive force to be positioned around the island's coastline.

You'll need a strong navy as well. Your goal must be to sink as many enemy craft as possible, eliminating invasion forces before they can secure a toehold on your land. As you are able to upgrade and expand your navy, you should do so, broadening the expanse of sea that is covered, keeping enemy vessels as far away as possible. Aircraft, especially carrier-based aircraft, are another effective deterrent as they become available to you.

You must do everything possible to make your island home an all-but-invincible fortress. Position defensive forces in such a way as to make it impossible for an enemy to slip ashore unnoticed. Upgrade your defenses on a regular basis. Build strong rail lines to ensure ease of movement around your homeland, letting you get troops to danger spots should they occur. Build city walls for all of your cities, coastal communities first.

You must erect economic defenses as well. That means maintaining a vital and sizable merchant marine to carry your caravans to distant ports. Because the ultimate size of your civilization is a bit limited—you will probably not expand over much beyond the borders of your island—it's up to your commercial fleet and the caravans it carries to generate those large sums of money that are essential to your growth.

As we'll see in the next section, you may be able to use your economic success to great benefit in overcoming external threats to your civilization.

THE PEACEFUL ART OF CONQUEST

Whether you are located on an island or a continent, you must make provision for dealing with other civilizations and their military forces. Because you are pursuing a peaceful route to the future, you need a strategy that minimizes your military risk, while also defusing some of the military threat you face.

If you can afford it, the best approach to this question is bribery, accomplished by your diplomatic corps. Use your diplo-

mats to buy the loyalty of opposing forces who pose a threat to you, especially those units who have moved onto your territory. The approach is costly, but carries the added benefit of offering you subversion of the enemy without violating any treaties you may have in place.

On a larger—and even more expensive—scale, you can use your diplomats to incite riots or subvert enemy cities, bringing those cities and their improvements into your own civilization. Again, while playing a "peaceful" game, this strategy is most effective when used against enemy cities on your own territory, or when looking for a quick way of acquiring cities that already possess Wonders of the World, a good way to boost your score during the final few turns of the game.

Alliances can also generate paths to "peaceful" conquest, especially if you strike the right ones. Use your diplomatic corps to derive pictures of the various civilizations on your world; then target those who pose the largest threat to your own civilization. Find another civilization also threatened by your target, and approach its leader with a military proposal. Or wait to be approached yourself with an offer of joint military action. Your own participation can be cautious: The trick is to get the other guy to do the work.

To the Stars!

Because you've set yourself the goal of winning the game through peaceful means, your actual goal is to deliver a cargo of colonists to Alpha Centauri before the time limit of the game expires. To that end, your progress and technologies must be guided toward achieving spaceflight early, exploiting your production to build and equip a starship, and launching the starship on a course that lets you reach the stars ahead of anyone else.

As usual, information is crucial. You must monitor the progress of other civilizations, trade or steal advances when neces-

sary, and be prepared to commit every resource of your civilization to starship construction when the time comes.

When is that time? As early as possible. Indeed, the moment you or another civilization begin building the Apollo Program Wonder, you should start boosting your treasury so you can build or buy the various pieces required to create a viable interstellar craft. Check the productive capacities of your cities. Some elements of the starship take far longer to build than others; you may, in fact, want to begin building habitation and other modules a few turns before your Apollo Wonder is completed. This gives you a head start on putting the elements in orbit once you've achieved spaceflight capability.

You may find yourself in a true space race. As we'll see below, there is a military approach to solving this competition, but there's an economic approach you can take as well. If your civilization is strong and its borders are secure, consider selling off improvements such as city walls, and using the funds to underwrite a "crash" program of starship building. By purchasing key elements, you can complete your starship in record time and launch it before anyone else.

If another civilization acquires spaceflight far in advance of you, you may have to abandon your peaceful principles for a time. If that other civilization reaches the brink of launching a starship that will reach Alpha Centauri before you, you might want to make a military raid on the enemy capitol. Only by capturing the capitol can you disrupt enemy starship production—or force a recall of the starship if it has already been launched. Be sure you have sufficient military force to capture the capitol, and be sure you're ready to defend your own capitol should the situation be reversed.

You may find yourself in an opposite situation. If your spaceflight capability is far in advance of any other civilization on your world, take the time to build a large starship with lots of colonists. As long as you launch and reach Alpha Centauri before the time

limit runs out, anything you can do to increase the number of colonists you deliver will help you earn a higher score.

Deal with pollution as quickly as possible—polluted squares can cost you dearly at the end of the game. Watch the Sunday symbol on the date line. The whiter it gets, the more danger of global warming you face.

Caring for Your Own World

For all that your goal is to colonize another world, your score will be affected by how well you care for your own world. A civilization with plenty of wonders, happy citizens, a successful starship, can still be undone by pollution, whose presence subtracts from your final score.

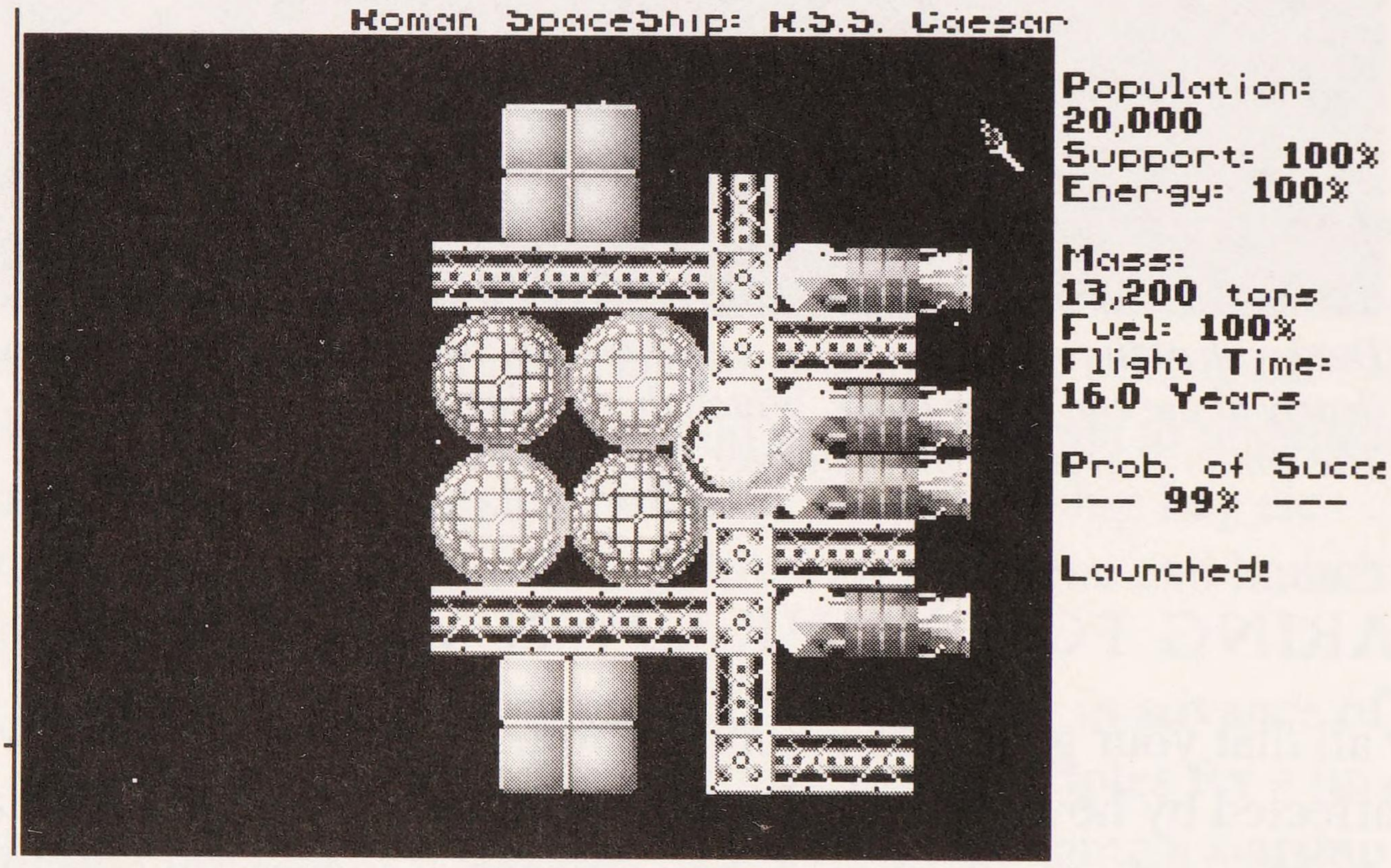
You will not be able to avoid industrializing your society, nor should you necessarily try. The presence of factories and manufacturing plants greatly enhances your economy and also makes possible the very rapid production of crucial units. Unfortunately, these improvements also create pollution.

There are a couple of things you can do. First, as you move more deeply into the industrial world, build plenty of settler units to clean up pollution squares as they occur. Two settler units per industrialized city is a fairly good ratio, although you may find

yourself needing more settlers around particularly large cities, or in the event of nuclear accident or war.

Invest as well in benign technologies—hydroelectric power, recycling centers, and mass transit all repay their investment by lessening the possibility of pollution.

Finally, as the game counts down to its conclusion, consider selling off the most offensive of your polluting agents—again, factories and manufacturing plants. Use the cash you earn to purchase more benign items aimed at increasing your population's happiness. Aim for having zero polluted squares by game's end.



Launch your starship ahead of other civilizations and reach Alpha Centauri first in order to ensure winning the game.

RULING

The most important of the aspects of building a peaceful, victorious civilization, this is also the most subjective, and will be dealt with most briefly. You'll learn quickly what governmental organizations and institutions work best in the context of the game, and also work best for you.

Generally speaking, though, the more free your form of government, assuming you can keep your citizens happy, the better your civilization will perform and the higher your final score will be.

To that end—which is, after all, the real end of the game—invest your time and energy in providing not only a free system of government and a strong economy, but also those "extras" that make civilized life worth living. These include plenty of leisure improvements such as temples, cathedrals, and coliseums. Invest as well in Wonders such as Women's Suffrage, the Cure For Cancer, Shakespeare's Theater, and Bach's Cathedral. Build universities and scatter libraries throughout your civilization. Make sure your people have plenty to think about as well as to eat and to spend.

Healthy, wealthy, and wise—come to think about it, that's not bad advice for our own, all too real civilization. Maybe our leaders could benefit from playing a few games of *Sid Meier's Civilization*.

Appendix A

175 Tips, Hints, and Tools for Ruling Your Civilization

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175 Tips, Hints, and Tools for Ruling Your Civilization

Sid Meier's Civilization is an electronic treasure chest whose contents are all but infinitely renewable: Within broad parameters, the game is a little different every time you play it. As a result, as noted in more than one place elsewhere in this book, there is no one right way to play *Civilization*. Decisions and goals are more contextual here than in most interactive entertainments. What works during one game may fail abysmally during another, and vice versa.

The tips and tricks offered in this appendix are based on hundreds of hours of playing the game, but also reflect my own prejudices, strategies, and interests. These may not correspond with yours, so be wary. You may find that, in some circumstances, your own goals are best served by doing the opposite of what I recommend here. More power to you!

You may also find that some of these nuggets of advice—or some of your own hard-learned lessons—contradict others. To

paraphrase Walt Whitman: There's room for contradictions. *Civilization* contains multitudes.

On, then, to a catalog of tools for winning *Sid Meier's Civilization*.

YOUR FIRST MILLENNIUM

1. Put down roots quickly. Your first city doesn't have to have the world's greatest location: Better to get it up and running, pumping out new units and improvements, than to lose valuable time.
2. Pursue writing before other cultural advances. No matter where you start—island or continent—the development of writing lays the groundwork for enhancing and expanding an exuberant intellectual culture composed of libraries, universities, and intellectual Wonders of the World which will serve your long-term goals on more levels than any other development in the game.
3. Decide as quickly as you can what type of game you are going to play. If you are going to pursue world conquest, for example, you should begin building your armies and assembling your resources before the first millennium ends. If you're going to play a game of peaceful expansion and consolidation, you should shore up your homeland's defenses against those enemies less benevolent than yourself.
4. Multiply, multiply, multiply! The race in *Civilization* often goes to the most fecund. By the end of your first millennia you should have at least three cities functioning and growing, with more on the way.
5. Because reproduction and creation of new cities is so important, don't spend valuable settler time developing *every* square around a city. You can create additional settlers to do

that later. Do enough development to get the city on sound economic footing, then move on to start another community.

6. Place defensive perimeters around your emerging civilization. Expand those perimeters as your civilization grows.
7. Build roads as you can afford the commitment of settlers. Not only do the roads increase your productivity, they also lay the groundwork—roadwork, as it were—for the rapid movement of forces should you be invaded.
8. Put one city to work building a Wonder of the World as early as possible. The addition of Wonders does much to boost your score, yet if you wait too long to create them, they may be acquired by other civilizations.
9. Develop pottery by all means. You must have granaries if you are to hold any hope at all of increasing your population and growing your cities.
10. Be prepared to shift strategies: The road to failure is paved, sometimes, with peaceful intentions, and not every would-be conqueror can actually manage to conquer. Play *with* the flow of the game, not against it.
11. Alternate your cities' labor force between agriculture and resource development until the population is large enough to attend to both. Agriculture results in increased population; resource production boosts your treasury.

Your First City

1. Generally speaking, you should build two militia units and fortify them immediately, then two more for exploration, before building additional settlers, military units, or city improvements. (If it quickly becomes clear that your civilization is located on an island, perhaps a single explorer is sufficient.)

2. Do not put off the construction of your barracks improvement. Only with the establishment of a barracks can you produce veteran military units that are strong enough to face the test of combat.
3. Don't forget to upgrade your defensive units once the barracks is completed. Units such as militia that were created before the barracks can then be moved to outlying areas or disbanded.
4. Should the spiritual side of civilization become available to you, put a temple in your first city. Establish the people's happiness early on, and it's easier to maintain it as the game grows more complex.
5. If your civilization is surrounded by other, stronger ones, build city walls. Although expensive in construction and maintenance, the walls amplify your defense force's ability to withstand attack, perhaps buying you enough time to prepare a military response or seek a treaty.
6. Develop at least two agricultural and one resource square before moving too far from your first city. These squares will give the city time to feed itself and generate enough income to grow during the early phases of the game.
7. Study the local terrain. If you've put down roots too quickly, and find yourself in a less-than-ideal spot for long-term growth, don't be afraid to move your capitol to a more fertile site once one becomes available. (Don't move too quickly, though: Make sure the new city is well established, defended, and growing before relocating your government there.)
8. As your first city grows—or fails to—adjust the worker allocation. If the city is wellfed and prosperous from the beginning, you might want to create a scientist to boost the city's intellectual production, hastening your advances.

9. Concentrate on population at least two turns out of three: Your goal is to have a civilization-wide population of more than a million by the year 1 A.D.
10. Build a marketplace as soon as that improvement becomes available. Better yet, *buy* the improvement. The increase in revenue will repay the expenditure very quickly.

Your First Encounter With Others

1. *Always* accept the first treaty offer upon initial contact with another civilization: It costs you nothing, and gives you time to gather your resources, marshal your forces, and prepare a more considered, and perhaps antagonistic, relationship with the other civilization.
2. The treaty established, use your militia to hold enemy expansion in check, positioning your units carefully, and fortifying them against enemy sneak attack. Use militia because they are easily and quickly produced, freeing your cities to concentrate the bulk of their productive time on more important units, city improvements, Wonders of the World, or civilization advances.
3. Have some backup for your border guards, especially if your guards are militia or diplomats, whose defensive factors are low. Stronger offensive units in reserve close to the border, or able to reach the border quickly, can make the difference between a successful enemy invasion and one that's turned back.
4. Once you've established a treaty with a neighboring tribe, get some diplomats into enemy territory as quickly as you can. During the treaty's tenure, your diplomats—and caravans, if you can produce them—enjoy essentially unlimited freedom of movement through enemy territory. This gives you the

chance to obtain a good portrait of the interior of your neighbor, learning whether he is stronger or weaker than you.

5. If you encounter an enemy at sea, try to follow his vessels back to their homeland, particularly if both of you are in triremes. The enemy may already have mapped the shortest paths between landmasses, saving you valuable exploration time.
6. Send caravans into enemy territory even if you plan ultimately to wipe the enemy from the face of your planet. Earn income while you can!
7. Use your ships to blockade—or observe—enemy ports. If you're playing for world domination, you'll want to contain the enemy to a single landmass. If taking a more peaceful approach, the presence of your ships will allow you to "shadow" the other civilization's vessels, giving you a good and useful picture of their expansions.
8. Look for natural barrier to enemy expansion—an isthmus, a large lake—and place defensive units in the only available paths.
9. Use your settlers to build forts at strategic points along the border with the enemy, then garrison the fort with defensive units.
10. If you can afford the allocation of units, place diplomats on fortification or sentry duty at various spots within the enemy civilization. They'll keep you posted of enemy troop and settler movement.

Second City

1. Build your second city in the most ideal location you can find, making up for the haste with which your first city was created.

2. Put your second city's citizens to work immediately on the construction of a barracks and a granary. Defensive forces should accompany the settler unit from the first city. Move them inside the new city, reassign them to it, and fortify them. Your new city is instantly defended.
3. Send settlers from your first city to develop the land around the second while it is busy producing the improvements it needs.
4. If you have the funds, *buy* the second city's initial improvements.
5. At least one of your first two cities should be a port.
6. Build a road between your first two cities as quickly as possible.
7. If the enemy lies to the west, consider locating your second city to the east, minimizing the chance it will be attacked.
8. Just as with your first city, establish a defensive perimeter around your second to stave off barbarians and unwanted neighbors.
9. With your first city concentrating its production on units, you might want to use the second for Wonders of the World, or educational institutions. Or vice versa.
10. Use the unit production of your second city to generate defensive forces for your third, and so on.

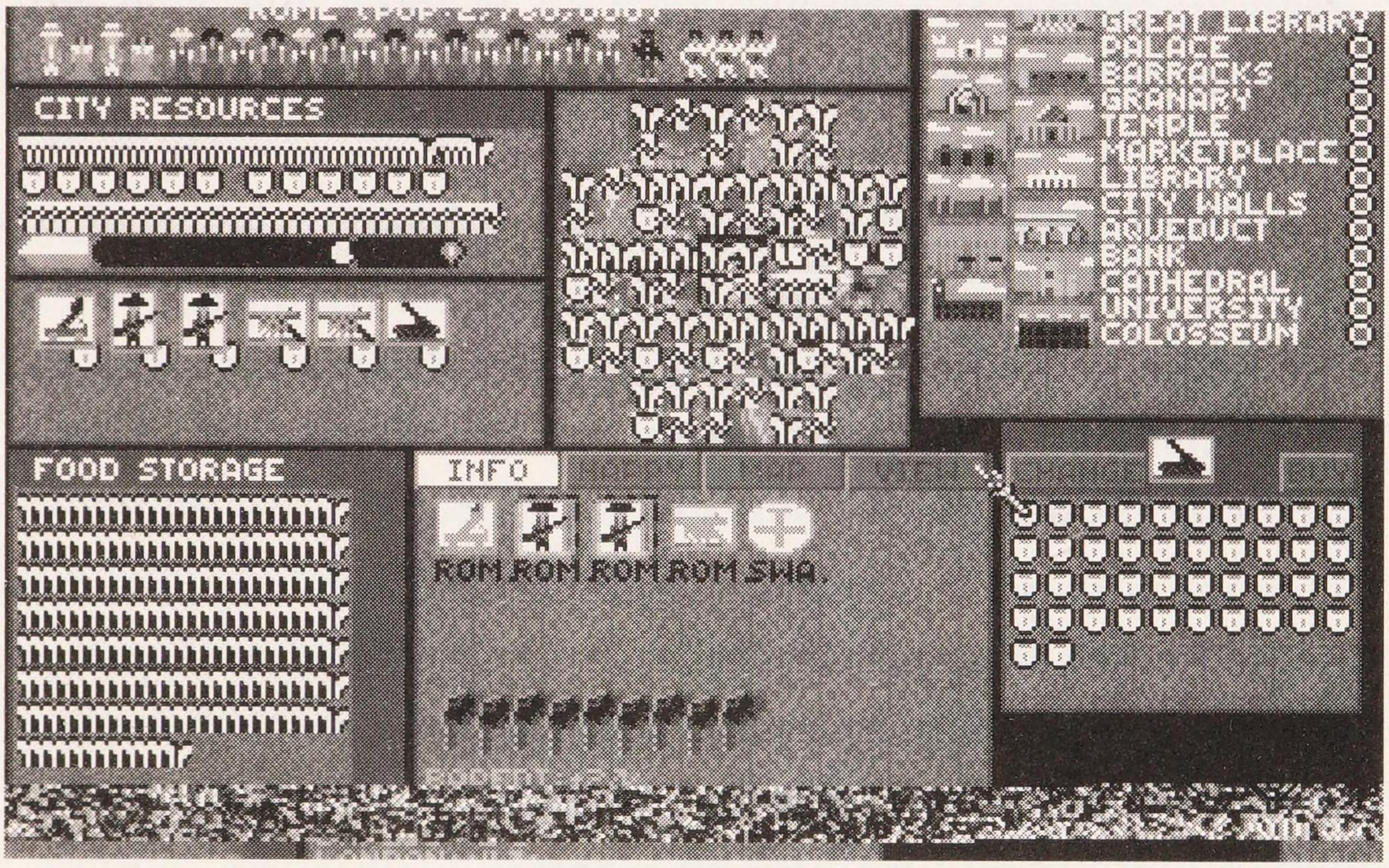
Treaties and Tributes

1. Don't be afraid to reject entreaties from other civilizations. They may take your "insolence" as an insult and embark on a war, but they may also respect your independence and offer a treaty.
2. Get to know your neighbors: Some of them can be trusted to honor their treaties, while others may stay friendly for no

more than a turn or two. The computer leaders built into the game have distinctive personalities; it will behoove you to be observant as your civilization and theirs become acquainted.

3. Generally speaking: Don't trust Mao, Stalin, Hammurabi, or Genghis Khan. And be wary of everyone else!
4. Occasionally you'll be asked to join another civilization in an alliance aimed at yet another civilization. Weigh your response carefully. It may be that you can strike a more advantageous alliance elsewhere.
5. Think twice before paying tribute. Civilizations that demand payment for peace are unlikely to leave you alone for long. Pay only when you have no other choice.
6. Technology exchanges can be tricky. Your best bet is to exchange technology only with civilizations more advanced yet weaker than yours. Giving advances to strong, warmongering neighbors is foolish.
7. Meet with other civilization leaders at least every third time they request a conference. It's time-consuming, but otherwise your avoidance is interpreted as a rebuff, and will lead to war.
8. Even possession of the United Nations Wonder of the World can't completely protect you from treaty violations, especially late in the game. If playing peacefully, initiate negotiations immediately after the sneak attack; the enemy will offer a treaty. (This, too, will likely be broken again before the war ends.) If playing a warlike game, use the time bought by the United Nations to build and position overwhelming military force of your own; then use it to crush the enemy.
9. Pay attention when an enemy's words are backed by nuclear weapons. Some of your enemies aren't afraid to use the Bomb, use it without warning, and use it more than once. Even if you're able eventually to make peace with them, the pollution unleashed may ruin your score. Your best bet is to wipe out nuclear-powered enemies—if you can.

10. Weave together networks of alliances against strong enemies, especially early in a game of conquest. By building a league of weaker nations against stronger ones, you may be able to cut down on the time required for world conquest, boosting your score.



Even a healthy and well-managed city can benefit from attention. This one is pumping out too much pollution and is too dependednt on entertainers to keep the populace happy.

Financial Tools

1. A city without a marketplace is financially and socially crippled. At higher levels, the same is true of a city without a bank.

2. Visit each of your city screens every few turns—or more often, if you're *really* serious about winning the economic side of the game—and experiment with your population's labor allocations. Some exploitable squares are more productive and valuable than others, yet may not be producing for your city. Move your people around and boost your income.

3. If you're planning to sell a city improvement—a step that should be taken in only the most dire of economic circumstances—do so quickly, before the improvement is rendered obsolete by technological or social advance. Obsolete improvements can't be sold.
4. Produce plenty of caravans, bearing in mind that each city can support only three trade routes. Send out caravans from every city.
5. The game defaults to the three most valuable trade routes, but you can waste a lot of time and energy on routes of lesser value that will later be superseded. Send your caravans to the most distant and largest foreign cities you can find: These generate the largest amounts of income.
6. The one time you should consider selling city improvements is just before they become obsolete. The develop of gunpowder, for example, renders barracks improvements obsolete. Since you'll have to replace your barracks anyway, why not earn some money from the old ones?
7. Another good opportunity to sell off improvements occurs when you hold an absolute upper hand. Possession of the United Nations Wonder of the World is a good example. Since your enemies must offer to make peace with you, you may not need items such as city walls, particularly those located far from enemy borders. Sell off the city walls, earn a fair piece of change, and relieve your cities of the burden of supporting those walls each turn.
8. As you locate new civilizations with new, large cities, dispatch caravans to establish trading routes. These may be more valuable than routes already in existence.
9. Give your citizens plenty of luxuries. This helps them appreciate your wisdom, often resulting in "We Love The King" days, which earn you generous bonuses.

10. In the latter days of the game, when some of your cities may be capable of producing vast engineering works in just a few turns, try building these works, then selling them as soon as they're completed. It's impractical advice for the real world, but can generate lots of cash in the game.
11. Monitor the amount your civilization costs in maintenance each turn, indexing that amount to your cash flow. If your treasury has grown fat, don't be afraid to spend, spend, spend for improvements or Wonders. Just keep enough cash in your treasury reserves to cover half a dozen lean turns or so.
12. If you *really* have a healthy treasury that can cover a few turns' loss of income, try this: Convert everything to luxury income for your citizens. They'll reward you with points beyond your wildest dreams.
13. Use caravans to help build Wonders. When a caravan arrives in a city building a Wonder, you have the option of assigning it's value to the completion of the Wonder. If you can build enough caravans quickly, this can hasten completion of the Wonder.
14. As your income rises, adjust your taxation level. Boost your science allocations, leaving enough in tax revenue to cover the cost of maintenance with minimal growth each turn.
15. For cities with more than enough food, turn some of those farmers into taxmen. Your treasury will appreciate it.
16. Build rail lines through all developable areas available to a city. Productivity will be increased by half.
17. Trade routes among the cities of your own civilization, no matter how far apart they're located, are rarely worthwhile.
18. Invest in factories and manufacturing plants as you are able to build them, but create pollution-control corps of engineers (settler units) to deal with their effluent. You'll need two

settler units per highly industrialized city to keep pollution under control.

19. Approaching the space race? Build the largest cash reserves you can—only global warfare is more expensive than getting into space.

MILITARY UNITS

1. Don't produce too many military units without a barracks. Veteran units are, essentially, the only ones really worth producing.
2. Develop mathematics as early as you can. This permits the creation of catapults, the first real "artillery." Only by amplifying your abilities through the use of technology—catapults, gunpowder, flight—can you enjoy an offensive edge.
3. Early in the game, use cavalry and chariots to "blitzkrieg" your way through enemy homelands. Slower-moving units such as catapults can be brought up later.
4. Upgrade your barracks the moment they become obsolete, especially if you are at war. Use your treasury to purchase new barracks in those cities closest to the front or at greatest risk of being overrun.
5. Consider fortifying strong defensive units around enemy cities rather than laying direct assault to those cities, especially if the city possesses defensive walls or a large number of fortified units. Seal off the city and starve it slowly with phalanx-level units if possible.
6. Build plenty of seagoing units. Naval power cannot be underestimated in the world of *Civilization*.
7. Consider keeping a strong naval unit on sentry duty *inside* your own harbors, especially if the war is going poorly. These units can spring to life from within the city, attacking enemy vessels which might bombard your port.

8. Use the "go-to" function to place units on patrol, covering large amounts of territory or sea with minimum input from you.
9. Disband military units no longer needed or of unlikely value to your civilization. Don't forget to disband older defensive units in cities being garrisoned by more advanced units.
10. Keep a strong offensive unit on sentry duty—not fortified—along with your fortified defensive units in each city. The offensive unit will "awaken" at the approach of the enemy, and can attack in some cases before the enemy assault begins.
11. Cities susceptible to frequent attack by barbarians might need more than one offensive sentry either inside or close to the city. You need to kill the barbarians before they can pillage your developed countryside.
12. Never stack military units in open terrain. They are far too vulnerable to being destroyed at a single blow, sometimes by a less-powerful enemy.
13. Blockade harbors with city walls; bombard those without them.
14. Especially in the age of transports, when a single vessel can carry eight units, escort your shipping with cruisers or battleships. Your advanced military vessels "see" farther than other units, and can alert you to the presence of enemy warcraft lying in wait for your convoy.
15. An aircraft carrier bearing bombers and fighters makes another good screening device for convoys.
16. Because of their extremely long range, nuclear missiles are among the best advance observers. Launch them from strategically located cities, or from aircraft carriers, and use them to explore and observe. Just be sure you leave sufficient moves for the missile to return to a friendly city or carrier.

17. And be careful if you use nuclear missiles in the manner described immediately above. One slip of your typing finger, and instead of surveillance your missile could unleash holocaust.
18. If your information reveals that an intransigently warlike enemy has developed nuclear weapons, launch a crash SDI building program. Only SDI can save your cities from nuclear attack.

YOU CAN'T RUN A CIVILIZATION ON AN EMPTY STOMACH

1. A city without a granary grows slowly at best.
2. Your granary holds several turns' worth of food. If your granary is filled to bursting, shift your citizens to mineral resource work or convert them to specialists for a few turns, living off your surplus agricultural products. Just don't forget to return them to the fields before famine strikes.
3. If you're having trouble getting a city's population to grow, shift *all* of the citizens to the fields. You may lose a little economic revenue, but before long your granary should begin to fill, and you can readjust the assignments of a larger, better-fed labor force.
4. Look for the most efficient routes to follow if bringing irrigation to your city's environs. Don't build more elaborate irrigation channels than are necessary.
5. Clear pollution from agricultural squares before other squares.
6. Replace granaries immediately should they be destroyed. Granaries should be replaced before any other structure.
7. When creating specialists, look at your granary supply. If it's full, take an agricultural square out of production. If you're

short on food, remove a mineral or other resource square from the work force.

8. When laying extended siege, pillage or occupy enemy agricultural squares, cutting off the city's food supply.
9. Take advantage of seafood: Those fish symbols in oceans and lakes contribute mightily to cities located near them.
10. Irrigate oases when you have the chance.
11. If your granary is well stocked with food, consider converting one or more agricultural squares into forests. Just keep an eye on food levels after you do so.

Wonders of the World

1. The most valuable Wonder of the World of the ancient world is the Great Library, especially if playing against a large number of enemy civilizations. You can't beat the boost in knowledge you get when two of those other civilizations make the same advance.
2. The most valuable Wonder of the World of the Middle Ages is Johann Sebastian Bach's Cathedral, especially if you're ruling a republic. You can't beat it for generating quite a few "We Love The King" days, with their concomitant increase in population.
3. The most valuable Wonder of the World of the modern world is the Apollo Program, if you're playing a space race game: Only with Apollo can you begin building your starship.
4. If playing a game of world conquest, the most valuable latter-day Wonder may well be, ironically enough, the United Nations. Because this Wonder forces enemy civilizations to capitulate to you, you can marshal your forces almost at

leisure, gathering them at critical spots before launching all-out attacks.

5. Be warned: Violating one treaty when you possess the United Nations Wonder seems to violate all of them. When you're ready to make war, make war on all fronts at once.
6. As soon as you have three cities, put one of them—probably your capitol—to work building a Wonder. The other cities can produce military and settler units, if need be, that can be transferred to the capitol to shore up its defenses or further develop the terrain around the city.
7. Use diplomats to seek out Wonder production in the cities of other civilizations. Then either sabotage that production or target those cities for capture, and the addition of their Wonders to your empire.
8. If pursuing a peaceful strategy—trying to win through diplomacy, financial strength, and expansion to the stars, focus your attention on those Wonders of the World that force your enemies to sue for peace: The Great Wall and the United Nations.
9. If playing a "peaceful" game, build as many Wonders of the World as possible, concentrating on those that boost your citizens' happiness. Your score will benefit greatly.
10. When playing a peaceful game and concentrating on building Wonders, don't forget that they must be defended. Put plenty of strong units in and around cities holding Wonders of the World.
11. Some Wonders of the World serve *all* the world: The Apollo Program is a good example. Use your diplomats to discover whether other civilizations are further along toward completing global Wonders of the World than you. If so, devote your resources to creating something exclusive to your civilization.

Hail, Conqueror

1. He who conquers the world fastest conquers the world best: If playing for global domination, every turn is vital. You can't stop to smell the roses if you want the world at your feet.
2. Strike the strongest civilizations first, with as much military might as you can muster. Use your diplomat skills to keep weaker nations weak, for easy destruction after the "big guys" are gone.
3. Coordinate, coordinate, coordinate! Establish a treaty with a civilization you plan to destroy. Flood the civilization with diplomats even as you mass your assault forces along its borders. When you hit, hit all at once, using diplomats for subversion and sabotage before invading with ground forces. Break the enemy's back during the first turn of the war.
4. If necessary, sell off improvements in your heartland to finance the final stages of a war on the frontier. Use the funds to subvert enemy cities first, to bribe enemy units second.

The Unfriendly Skies

1. As soon as you develop aircraft capabilities, begin cranking out fighters and, later, bombers. Don't wait a single turn: You can't have too large an air force, particularly in heated games of global combat.
2. Try to garrison a couple of fighters in every city—not just those near the front. Fighters can respond quickly to enemy threats, saving you from the dangers of surprise attack, or invasion from an unexpected direction.
3. Your fighters can attack—and keep on attacking. This makes them especially valuable when you're facing waves of enemy units. Go for stacked units first, or for transport craft that might be carrying several units.

4. If your resources are running low, don't station your fighters or bombers too close to the front—in harbors, for example. They are too vulnerable there to enemy bombardment. Base them a few squares back in a city or on board a carrier. Then, when enemy ships or bombers appear, you can fly out to engage them.
5. Bombers have as much strategic value in *Civilization* as they do in the real world. A squadron of bombers can turn the tide of war, even against overwhelming odds.
6. If you're planning to make war on a civilization with whom you enjoy treaty status, take advantage of the peace and get your air force in position to attack. Try to target three bombers for each city you're planning to hit, more if you can afford it. Attack stacked units in the open first.
7. Don't overlook the surveillance capabilities of your aircraft, particularly the bombers. Their long range makes them perfect for exploring the interior of enemy continents and islands.
8. Carrier power is ideal for isolating and containing an enemy island. Position a couple of carriers at either end of the island, support them with cruisers to guard against enemy ships, and use their aircraft to patrol the enemy coastline.
9. Remember the lessons of Desert Storm: Once you've launched an air war, don't let up.
10. Desert Storm Lesson Two: Once the air war has taken its toll, be sure you have plenty of fast, mobile ground forces in position to mop up.
11. Desert Storm Lesson Three: In this *Civilization*, you don't have to stop. If your air power has made it possible for you to roll all the way over the enemy, do so, assuming that suits your overall strategic plan.

And All the Ships at Sea ...

1. Never send a loaded trireme out into uncharted waters. It's one thing to risk a ship to loss at sea, quite another to risk valuable units. Chart your course before moving cargo.
2. Early on, designate one or two coastal towns as major shipyards. Manipulate their population and resources so as to be able to produce ships at a rapid rate. (You should have another seaport within easy sailing distance, to which newly constructed ships can be reassigned in order to relieve the shipyard of the burden of support.)
3. Build fleets in the major oceans and gulfs, along with seaports to support and load them. Cut down on the necessity for moving ships all over the globe.
4. As soon as you can build cruisers, battleships, and submarines, do so—their extended range of view is invaluable for spotting enemy craft, and equally invaluable for opening up any remaining hidden areas of the sea.
5. Use your advanced naval craft to patrol the coastlines of unexplored enemy islands and continents. Advanced ships "see" an adjacent two squares, which can give you a good picture of another civilization's coastal defenses.
6. Don't forget naval power during ground assaults. Look for isthmuses and narrows through which enemy ground transport must move. Position a battleship or cruiser on either side of the landmass and open fire on enemy units stranded in your sights between turns.
7. If bombarding a fortified harbor with a value of nine or higher, bring at least two warships. You'll likely lose one.
8. Transports are worth their weight in gold, not just for mounting amphibious invasions. Fill your ships with caravans and send them to all the corners of your world. A successful

leader is one whose merchant fleet is as large as his navy. And your merchant fleet may be even busier.

9. Plot your invasion routes so the transport vessels reach landfall on the first move of their turn. That lets you move the ships after debarking some of their forces, spreading your troops across the broadest possible front.
10. Submarines make terrific blockade vessels, but their limited movement capability all but requires that you keep some fast, long-range cruisers nearby to take their place should they be sunk.
11. Be careful, early in the game, about building ships before the immediate area around the harbor is fully explored. You might wind up with a landlocked trireme stuck in a lake with nowhere to go!

Getting Around

1. Use the Go-to key only occasionally. While it takes some of the burden of issuing orders from you, it rarely moves your units along the most efficient routes, nor does it take full advantage of the movement benefits offered by rail transportation.
2. Pressing H will return your bombers and fighters to the nearest friendly city or carrier, if the aircraft possess sufficient movement points.
3. Moving through a city costs movement points. Build railways around cities as well as up to them, letting you conserve movement points for your units.
4. When engaged in a continental war, continue driving rail lines to the front. It's worth committing extra settler units to this task, especially if you're conquering enemy territory at a good clip.

5. Study the world map as it's revealed. Its layout can give you good guidance in the placement of cities proximate to advantageous sea routes.
6. Look for rail lines along the coasts of newly discovered continents or islands, or enemy continents or islands you're revisiting. Debark your diplomats and caravans on squares with railroad track and they'll be able to move farther when the next turn arrives.
7. Centralize your embarkation points for units bound overseas. The central locations need not be a city. Run a rail line to a remote area near an advantageous shipping lane. Send the units you wish to move overseas to that point first, picking them up with your cargo vessel. Of course, you'll eventually want to put a city there, and probably should do so sooner than later. It's also smart to protect such remote loading zones with a ship or two, to prevent enemy craft from sneaking in and opening fire on your sentried units.
8. Build cities on remote islands to serve as island-hopping airbases. These need not be the most viable islands for long-term development, but should be well fortified against enemy assault. Islands lying just off enemy coastlines make the most valuable airbases of all.
9. Pillage enemy inter-city roads and rail lines if possible during wartime. Cutting their lines of transport gives you the chance to catch enemy units in the open, unable to move.
10. If forced into a long retreat, pick a spot at which to cut your own transportation lines. Doing so in the right place can help you establish a "killing field" where the enemy units will be halted and vulnerable to your fire.

Diplomacy

1. The diplomat is arguably the most valuable unit in the game; certainly it's the most flexible. Produce plenty of diplomats and send them throughout the world.
2. Don't overlook the value of the diplomat as a "place-holder." On sentry or fortification duty, your diplomat will alert you to the presence of enemy forces. The advantage is that the diplomat can attempt to bribe the forces over to your side, if you have the money.
3. Stealing technology is an and violates any treaties in existence between you and your target. If you have several diplomats traveling inside enemy territory, make sure all are in position to make their move during the same turn. Otherwise you run the risk of losing them to enemy retaliation.
4. If a city looks vulnerable to subversion, try it. Weaker cities can generally be subverted for less money than wealthier ones.
5. Try to get two or three diplomats in position around each of the enemy's major cities just before you invade. Use the diplomats one after another to sabotage enemy production and destroy enemy improvements.
6. Don't use diplomats to uncover serendipity squares. They are too easily wiped out by barbarians.

Energy

1. In terms of long-term scoring, the best energy sources are those that pollute the least.
2. The game, or its designers, has a built-in bias against nuclear fission: Be wary of building nuclear plants until you've developed fusion. At the very least, build nuclear plants only in the most socially stable of cities.

3. Build Hoover Dam. This Wonder of the World provides clean power to your whole continent—and the game defines continent pretty liberally.

Ruling

1. Better to rule in Hell than serve in Heaven: You may not be able to be as nice as you want while you play the game.
2. If you're going to war, do so as a despot or a monarch. Otherwise, the war carries too high a social cost.
3. Alternate your form of government often, depending on your short-term goals.
4. Go for "We Love The King" days, earned by giving your people the "good life" of luxuries. You'll end up with more people.
5. Try a strategy that focuses your attention and production on cures for cancer, women's suffrage, and other social benefits. You might be surprised at the effect this has on your people's willingness to support your choices.

Space Travel

1. If playing to win by reaching Alpha Centauri first, commit everything you have to the space race once it begins. Spend the time waiting for that beginning by building up your perimeter defenses against attack. Once you've undertaken to build a starship, you'll need the productive output of every city you can spare, and you can allow nothing to interfere with that production.
2. Since starship modules take longer to build, start them first. Have at least three cities of roughly equivalent size working on module production.

3. Starship structural pieces are the easiest to build, yet are the pieces you'll need in largest quantity. Find a couple of cities that can crank these pieces out and get them going.
4. The more propulsion units your starship has, the faster it reaches Alpha Centauri. The more colonists you attempt to deliver to Alpha Centauri, the more your starship's weight. Try to install two propulsion units for every complete colonist package—habitation, life support, and solar power modules—you intend to launch.
5. Guard your capitol! Losing it brings your interstellar program to a crashing close.
6. Watch the clock. You must reach the Alpha Centauri system before your reign expires, or all your work is for naught.
7. Watch the other civilizations' starship development. If they launch before you do, you may want to make a mad dash for their capitol in hopes of capturing it before their starship reaches its destination.
8. Consider selling off some improvements in order to buy more colonists and life-support modules. The more colonists you deliver to Alpha Centauri, the higher your score.
9. Once your starship is launched, convert *all* starship-related production to other ends. After launch, no further starship production can take place unless your craft is lost or recalled by the loss of your capitol. Shift your resources and production to items likely to boost your overall score. Remember, after launch, the game is counting its way down to the finish line.
10. Don't launch unless your arrival time is less than 20 years. If it's more than that, add more fuel and propulsion units.
11. Not tired yet? Take a deep breath, reboot and restart *Sid Meier's Civilization,* and begin again, pretending that now

your settlers are taming an unknown world, in orbit around Alpha Centauri.

Two Great Undocumented Features

1. Tired of facing the same old enemies? Press Alt-R to randomize the personalities of the leaders of other civilizations.
2. In the earliest copies of the game, pressing Shift-1234567890t lets you get a complete world map, see into enemy cities, and generally peek behind the scenes. This "feature" was discontinued after the first release, but it's worth a try just in case.

Appendix B

A Conversation with the Creators

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A Conversation with the Creators

The Importance of Being Sid

There is about Sid Meier an air of quiet thoughtfulness. Not just in a courteous sense, although he is a considerate and generous host.

But also thoughtful in the larger sense—Meier is filled with thought. To our benefit, he devotes much of that thought to the creation and design of interactive entertainments. Even more to our benefit, Meier increasingly thinks about ways in which to make entertainment that is *about* something. And, still better, his games remain imminently playable, no matter what their subject matter.

"There are games that ask you more to admire the design of the game than to play the game," Meier says, although—always the nice guy—he declines to name names. "Too many games are designed first, and played later." In his own work, Meier always puts the player first.

That priority, in fact, is what he's proudest of in *Civilization*. "In our games we try to make the player the star," he says. Every

step of the design process is aimed at giving the player the tools needed to have an entertaining time playing the game, no matter how complex the game appears.

On the surface, *Sid Meier's Civilization* appears ferociously complex, yet even first-time players find it easy to take charge of a new society, building cities, encountering other nations, manipulating some large variables as their own nation grows. That was a deliberate goal on Meier's part. The material of the game conspired along with Meier's desires: Everyone begins at the same primitive level.

Interactivity can be a burden, Meier points out. "I'm most comfortable with games that relate to the real world," he says. That comfort level imposes on him a dilemma: How do you design a "real-world" game that's still manageable for new or first-time players, those who do not necessarily have hundreds of hours of experience with computer games. It's a dilemma Meier first solved with *Pirates!*, which he sees as a sort of an "adventure game for people who don't play adventure games."

In *Civilization,* Meier solves the problem by providing a graduated scale of tools for the player. You don't start with everything at your disposal; you have to grow and learn along with your civilization, adding tools to your own arsenal of experience even as your electronic citizens are adding advances of their own.

"Most games have a learning curve," Meier says, "a barrier to entry that almost requires you to be dedicated to reading the manual, playing again and again. You can probably find ways of starting people off with only having to know a small number of concepts, layering them and introducing them as they become important. It's a style we probably ought to do more of. If games are ever going to break out into the mass market, I think they have to have a much more friendly quality in terms of the barrier to entry. They have to be unintimidating. There's a large intimidation factor that most people have as far as computers are concerned, and that's what we have to overcome."

The nature of those layered concepts in *Civilization*—economics, philosophies, technologies, and so on—help *Civilization* stand both above and apart from its predecessors. Those predecessors include a board game that was also called *Civilization,* and a computer game called *Empire*.

The board game focused almost exclusively on the earliest days of civilization, specifically in the regions surrounding the Mediterranean. Allowing for the limitations imposed by the medium—board, pieces, cards—the game nonetheless managed to communicate many of the complexities and consequences of intellectual ferment and progress as exemplified by Romans, Greeks, Egyptians, and so on. Its specific influence on Meier was the game's use of big concepts—law, religion, and so on—rather than more narrow representations or examples of ideas. "I think that if I hadn't seen that game," he says, "I might have been a little more specific. But even before we played it, we had decided that ours would be a broader, more hands-on game." Meier had decided as well that his game would have a much longer time frame.

Empire was—and is—a game of planetary conquest and industrial production that has come close to being a full-time occupation for many players. Starting with a single visible map square, *Empire* challenges players not only to conquer the world, but also to explore it, to regulate and manage the production of various military elements at cities across the surface of the planet.

The two games may well be predecessors, but they are also springboards. Meier's game contains its homages to the two earlier games, but quickly moves beyond them on every level, most notably in the sheer number of aspects of civilization that are included for the player to maniuplate.

How did Meier research a project so vast? "I'm kind of anti-research," Meier says. "It's my philosophy that you don't want to be too much smarter than your player ... you don't want to impose superior knowledge on the player. Research is done to get the facts

right, but not to overwhelm the player with obscure knowledge that only the designer knows."

Nevertheless, the game shows the deep reading and thinking that Meier and Shelley have done in history, which shows particularly well, I think, in the game's portrayal of the history of ideas and their interrelationships. Certainly the fact that the concept of literacy underlies so many of the game's branches implies a deep respect for the place of learning, of the *idea* in human history.

"There's a high moral tone to the game," Meier says with a laugh, then turns more serious. "Frankly, every now and then we have guilt pangs about doing games where things blow up. But there's also this idea that during the playing of the game, the player feels good about introducing concepts such as literacy, or religion. If you're going to give the player a crumb, why not give him a *big* crumb? There's no reason not to make the game about as many interesting, and large, and important topics as possible. Again, as long as the game remains *playable*."

Meier was joking, but there is a moral quality to the game that's not only refreshing, but that also directly addresses his commitment to relating his games to the real world. There are consequences at work here, and Meier is very much aware of them. Players come to care about their civilizations, thinking of them almost as living things.

That "living" aspect of the game raises it, I think, to the level of art, one of the few computer games to achieve such levels. There are parallels here to artificial life, cellular automata, even traditional history books.

The game breaks much ground. If nothing else, the idea of the Civilopedia, a huge on-line help system, should be adopted by more designers and publishers. The more assistance that can be offered a player via the computer itself, the more the game helps the player overcome that intimidation too many people still feel about computers.

Approaching the end of nearly a year's work on this game, Meier is tired, but generally pleased. Not self-satisfied: He is a truly modest man, but one who truly brings every energy he has to bear upon rendering invisible the complexities of game design, putting the player truly in charge of the electronic destinies of their creations.

For all of his modesty, Meier seems aware of just how much he has accomplished.

"This game contains all of my best ideas right now," Meier says. Those ideas are very good indeed, and they show in every frame and at every level of the game.

Bruce Shelley: A Writer's Turn of Mind

Bruce Shelley *seems* like a writer. He has all the attributes: a certain distant gaze in his eyes, the care he takes in choosing his words, the willingness to explore the consequences of ideas that come up in even casual conversation.

Of course, it helps that he *is* in actuality a fine writer. Compare the prose in one of Shelley's manuals with that in most software documentation and you'll see what I mean.

Shelley has worked with Meier on several products, bringing his own imagination and wide reading to bear on many of the ideas that Meier raises with his designs. There is an easy give-and-take between the two, with Meier always quick to acknowledge Shelley's contribution to finished game designs.

Shelley's participation extends beyond design and manual responsibilities. He has the pleasure of being the prime playtester for new projects, working through them again and again, and offering Meier insights and suggestions as he does.

Shelley's office is filled with history books, but he echoes Meier's comments on specific research and its place—or lack of it—in the game. "We based a lot of the game on our own under-

standing," he says, "but we did consult some historical atlases and timelines."

Along those lines, as it were, there are moments in the game's "history" where the drama heightens. "There are a couple of points in the game where technology changes and the pace of the game accelerates," Shelley says. "You worry more. The lurking danger is there. They might have something that can really hurt you. Nuclear weapons can devastate your whole economy. The stakes are higher." As, with the introduction of nuclear weapons in our century, the global drama grew more tense.

To that end, how much does the game rest upon the actual history of the world, our world?

"We're building *a* civilization," Shelley points out, "not specifically *our* civilization. Temples, cathedrals, and so on are specific to each civilization in the game, not Judeo-Christian in nature."

That flexibility, the freedom from specific historical sequence or reference serves not only game design, but also, more importantly, the player. "The player decides how economies are run, when to go to war, science, technology, etc. You're the guiding spirit of your civilization."

Shelley is proudest of the richness of the game experience. "The game transports you, makes you really get attached to what you're doing, even as you're making great plans for the future. It's an absorbing exercise. We've taken the technology to a new level."

Shelley appreciates, perhaps above all, the gameplay benefits that derive from this flexibility. "You can decide whether to pursue a technology path that leads to a certain type of military unit, or one that leads to a certain type of government," he says. "It's all up to you."

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About the Author

Keith Ferrell is the editor of OMNI magazine, the world's leading consumer science lifestyle magazine, and Editorial Director for COMPUTE magazine, the leading magazine for home computer enthusiasts.

Ferrell attended the Residential College of the University of North Carolina in Greensboro and has taught and lectured there. He is the author of seven books, including biographies for young adults on such historical figures as Ernest Hemingway, George Orwell, John Steinbeck, and H.G. Wells. He has written a successful series of thrillers under a pen name. Forthcoming are biographies of Jack London and Robert Oppenheimer, another novel, and a rumination on the impact of video on world culture.

Ferrell has for several years written the computer hardware and computer software articles for *World Book Encyclopedia* and *World Book Science Year.*

As a public speaker, Ferrell has addressed public schools, universities, and business people and has spoken in front of audiences of over 2,000. Topics addressed include the future of business, the importance of competitive research, the dangers of censorship, and the future of libraries and information technologies. He has done countless radio interviews and made several television appearances.

Ferrell was honored in 1990 and 1991 with the Software Publishers' Association Award for "Outstanding Journalistic Contributions of the Microcomputer Software Industry." Since 1990 he has been the spokesperson for the Consumer Software Publishers of America.

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The author is both editorial director of *COMPUTE* magazine and editor of *OMNI* magazine. He has authored scores of magazine articles and several books, including the recently released *Big Book of PC Sports*.

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