Chapter 3

ADVANCED RULES

INTRODUCTION

This section of the manual contains advanced rules for *Sid Meier's Civilization IV*. The advanced manual includes sections on terrain, units, cities, technology, difficulty levels, the Options Screen, multiplayer games, and mods.

TERRAIN

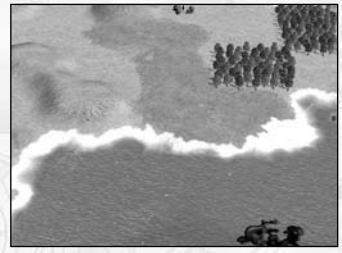
In this section you'll find a description of all of the terrain-types in the game, followed by a list of the resources.

TERRAIN TYPES

Coast

Food: 1
Production: 0
Commerce: 2
Defensive Bonus: 10%

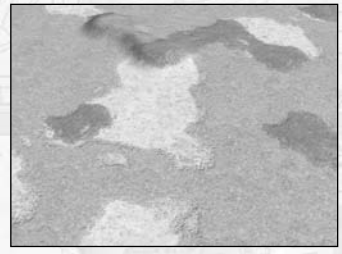
Cannot build cities on coastal squares.



Desert

Food: 0
Production: 0
Commerce: 0
Defensive Bonus: 0%

+1 commerce adjacent to river; improvements take 25% longer to build.



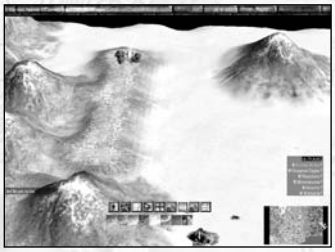
Grassland

Food: 2
Production: 0
Commerce: 0
Defensive Bonus: 0%

+1 commerce adjacent to river.

Ice
Food: 0
Production: 0
Commerce: 0
Defensive Bonus: 0%

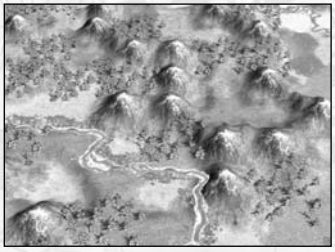
Improvements take 50% longer to build.



Ocean
Food: 1
Production: 0
Commerce: 1
Defensive Bonus: 0%

Peak
Food: 0
Production: 0
Commerce: 0
Defensive Bonus: 0%

Impassable terrain.



Plains
Food: 1
Production: 1
Commerce: 0
Defensive Bonus: 0%

+1 commerce adjacent to river.

Tundra
Food: 1
Production: 0
Commerce: 0
Defensive Bonus: 0%

+1 commerce adjacent to river; improvements take 25% longer to build.

TERRAIN FEATURES

Fallout
Food: -3
Production: -3
Commerce: -3
Defensive Bonus: 0%

Costs 2 mp to enter; cannot build improvements until Fallout is cleared.

Floodplains
Food: +3
Production: 0
Commerce: 0
Defensive Bonus: 0%

+1 commerce adjacent to river; -0.4 health in nearby cities.

Forest
Food: 0
Production: +1
Commerce: 0
Defensive Bonus: 50%

Costs 2 mps to enter; +0.5 health in nearby cities.

Hills

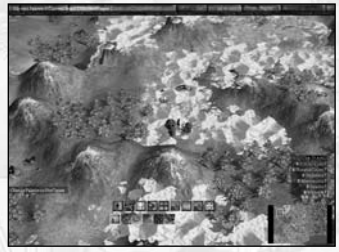
Food: -1
Production: +1
Commerce: 0
Defensive Bonus: 25%

Costs 2 mp to enter; +1 commerce adjacent to river.

Ice

Food: 0
Production: 0
Commerce: 0
Defensive Bonus: 0%

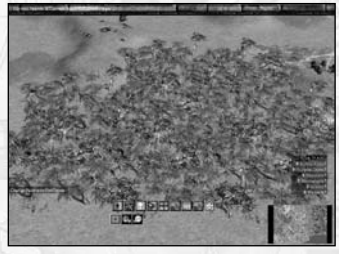
Impassable terrain



Jungle

Food: -1
Production: 0
Commerce: 0
Defensive Bonus: 50%

Costs 2 mp to enter; -0.25 health in nearby cities.



Oasis

Food: +3
Production: 0
Commerce: +2
Defensive Bonus: 0%

Costs 2 mp to enter; fresh water source; cannot build cities or improvements here.

RESOURCES

Following is a list of all of the resources in the game.

Aluminium

Tech Revealed By: Industrialism

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +4 Production, +1 Commerce

Units Requiring this Bonus: Jet Fighter (and oil), Modern Armour (and oil), Stealth Bomber (and oil)

Construction Speed Halved:
Space Elevator, Apollo Program, SDI

Banana

Tech Revealed By: Always Visible

Tech Required to Access: Calendar

Improvement Required: Plantation

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +2 Health with Plantation

Clam

Tech Revealed By: Always Visible

Tech Required to Access: Fishing

Improvement Required: Net

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Fishing Boats

Coal

Tech Revealed By: Steam Power

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +3 Production, 0 Commerce

Units Requiring this Bonus: Ironclad (and iron)

Additional Effects: Required for construction of Railroad improvement.

Copper

Tech Revealed By: Bronze Working

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +3 Production, 0 Commerce

Units Requiring this Bonus: Axeman (or iron), Maceman (or iron), Phalanx (or iron), Spearman (or iron)

Construction Speed Halved: Buddhist Stupa, Confucian Academy, Taoist Pagoda, Colossus, Statue of Liberty, Internet

Corn

Tech Revealed By: Always Visible

Tech Required to Access: Agriculture

Improvement Required: Farm

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Farm

Cow

Tech Revealed By: Always Visible

Tech Required to Access: Animal Husbandry

Improvement Required: Pasture

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +1 Food, +2 Production, 0 Commerce

Additional Effects: +1 Health with Pasture

Crab

Tech Revealed By: Always Visible

Tech Required to Access: Fishing

Improvement Required: Net

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Fishing Boats

Deer

Tech Revealed By: Always Visible

Tech Required to Access: Hunting

Improvement Required: Camp

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Camp

Dye

Tech Revealed By: Always Visible

Tech Required to Access: Calendar

Improvement Required: Plantation

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, 0 Production, +4 Commerce

Additional Effects: +1 Happiness with Plantation

Fish

Tech Revealed By: Always Visible

Tech Required to Access: Fishing

Improvement Required: Fishing Boats

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +3 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Fishing Boats

Fur

Tech Revealed By: Always Visible

Tech Required to Access: Hunting

Improvement Required: Camp

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, 0 Production, +3 Commerce

Additional Effects: +1 Happiness with Camp

Gems

Tech Revealed By: Always Visible

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, +1 Production, +5 Commerce

Additional Effects: +1 Happiness with Mine

Gold

Tech Revealed By: Always Visible

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, +1 Production, +6 Commerce

Additional Effects: +1 Happiness with Mine

Hit Movies

Tech Revealed By: Hollywood Wonder

Tech Required to Access: None

Wonder Required: Hollywood

Base Bonus: 0 Food, 0 Production, 0 Commerce

Improved Bonus: 0 Food, 0 Production, 0 Commerce

Additional Effects: +1 Happiness

Hit Musicals

Tech Revealed By: Broadway Wonder

Tech Required to Access: None

Wonder Required: Broadway

Base Bonus: 0 Food, 0 Production, 0 Commerce

Improved Bonus: 0 Food, 0 Production, 0 Commerce

Additional Effects: +1 Happiness

Hit Singles

Tech Revealed By: Rock 'n Roll Wonder

Tech Required to Access: None

Wonder Required: Rock 'n' Roll

Base Bonus: 0 Food, 0 Production, 0 Commerce

Improved Bonus: 0 Food, 0 Production, 0 Commerce

Additional Effects: +1 Happiness

Horse

Tech Revealed By: Always Visible

Tech Required to Access: Animal Husbandry

Improvement Required: Pasture

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +2 Production, +1 Commerce

Units Requiring this Bonus: Cavalry, Chariot, Conquistador (and iron), Cossack, Horse Archer, Immortal, Keshik, Knight (and iron), War Chariot

Incense

Tech Revealed By: Always Visible

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: Food, 0 Production, +5 Commerce

Additional Effects: +1 Happiness with Plantation

Iron

Tech Revealed By: Iron Working

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +3 Production, 0 Commerce

Units Requiring this Bonus: Axeman (or copper), Cannon, Cho-Ko-Nu, Conquistador (and horses), Crossbowman, Frigate, Ironclad (and coal), Knight (and horses), Maceman (or copper), Phalanx (or copper), Pikeman, Praetorian, Samurai, Spearman (or copper), Swordsman

Construction Speed Halved: Eiffel Tower

Ivory

Tech Revealed By: Always Visible

Tech Required to Access: Hunting

Improvement Required: Camp

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +1 Production, +1 Commerce

Units Requiring this Bonus: War Elephant

Additional Effects: +1 Happiness with Camp

Marble

Tech Revealed By: Always Visible

Tech Required to Access: Masonry

Improvement Required: Quarry

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +1 Production, +2 Commerce

Construction Speed Halved: Hindu Mandir, Islamic Mosque, Hermitage, Heroic Epic, National Epic, Great Library, Hagia Sophia, Oracle, Parthenon, Sistine Chapel, Taj Mahal, Versailles

Oil

Tech Revealed By: Scientific Method

Tech Required to Access: Combustion

Improvement Required: Well, Offshore Platform

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +2 Production, +1 Commerce

Units Requiring this Bonus: Battleship (or uranium), Bomber, Carrier (or uranium), Destroyer (or uranium), Fighter, Gunship, Jet Fighter (and aluminium), Modern Armour (and aluminium), Panzer, Stealth Bomber (and aluminium), Submarine (or uranium), Tank, Transport (or uranium)

Pig

Tech Revealed By: Always Visible

Tech Required to Access: Animal Husbandry

Improvement Required: Camp

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +3 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Pasture

Rice

Tech Revealed By: Always Visible

Tech Required to Access: Agriculture

Improvement Required: Farm

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Farm

Sheep

Tech Revealed By: Always Visible

Tech Required to Access: Animal Husbandry

Improvement Required: Pasture

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +2 Food, 0 Production, +1 Commerce

Additional Effects: +1 Health with Pasture

Silk

Tech Revealed By: Always Visible

Tech Required to Access: Calendar

Improvement Required: Plantation

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, 0 Production, +3 Commerce

Additional Effects: +1 Happiness with Plantation

Silver

Tech Revealed By: Always Visible

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: 0 Food, +1 Production, +4 Commerce

Additional Effects: +1 Happiness with Mine

Spices

Tech Revealed By: Always Visible

Tech Required to Access: Calendar

Improvement Required: Plantation

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: +1 Food, 0 Production, +2 Commerce

Additional Effects: +1 Happiness with Plantation

Stone

Tech Revealed By: Always Visible

Tech Required to Access: Masonry

Improvement Required: Quarry

Base Bonus: 0 Food, +1 Production, 0 Commerce

Improved Bonus: 0 Food, +2 Production, 0 Commerce

Construction Speed Halved: Christian Cathedral, Jewish Synagogue, Mount Rushmore, Oxford University, West Point, Angkor Wat, Chichen Itza, Hanging Gardens, Kremlin, Notre Dame, Pyramids, Spiral Minaret, Stonehenge

Sugar

Tech Revealed By: Always Visible

Tech Required to Access: Calendar

Improvement Required: Plantation

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +1 Food, 0 Production, +1 Commerce

Additional Effects: +1 Happiness with Plantation

Uranium

Tech Revealed By: Physics

Tech Required to Access: Mining

Improvement Required: Mine

Base Bonus: 0 Food, 0 Production, 0 Commerce

Improved Bonus: 0 Food, 2 Production, +3 Commerce

Units Requiring this Bonus: Battleship (or oil), Carrier (or oil), Destroyer (or oil), ICBM, Submarine (or oil), Transport (or oil), nukes

Construction Speed Halved: Manhattan Project

Whale

Tech Revealed By: Always Visible

Tech Required to Access: Optics

Improvement Required: Net

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: 0 Food, +1 Production, +2 Commerce

Additional Effects: +1 Happiness with Whaling Boats

Wheat

Tech Revealed By: Always Visible

Tech Required to Access: Agriculture

Improvement Required: Farm

Base Bonus: +1 Food, 0 Production, 0 Commerce

Improved Bonus: +3 Food, 0 Production, 0 Commerce

Additional Effects: +1 Health with Farm

Wine

Tech Revealed By: Always Visible

Tech Required to Access: Meditation

Improvement Required: Winery

Base Bonus: 0 Food, 0 Production, +1 Commerce

Improved Bonus: +1 Food, 0 Production, +2 Commerce

Additional Effects: +1 Happiness with Winery

UNITS

The following units require a bit more explanation than can be found in "The Basics" portion of this manual.

NAVAL UNITS

Throughout history, mankind has made great use of the seas. For millennia fishing boats have harvested the oceans' bounty. Trading vessels have carried goods to every corner of the world. Exploration ships have sought out the oceans' secrets. And mighty warships have fought great battles to decide the fates of nations. In *Civilization IV* the seas are places of great opportunity and peril.

Constructing Naval Units

Naval units can be constructed in any city adjacent to a coastal space. They are built like any other unit – they require specific technologies (and sometimes resources) to be constructed.

DRYDOCKS

The drydock building increases the speed at which a city constructs naval units by 50%. Further, naval units constructed in a city with a drydock begin the game with 4 experience points. (You must have the "steel" technology to construct drydocks.)

Moving Naval Units

Some early naval units must remain in coastal spaces or any water spaces within their builder's cultural boundaries. These units can move within other nations' cultural boundaries if their civilisations have an Open Borders agreement with those nations or if they're at war with them. (See galleys and work boats, pages 116 and 118.)

CROSSING CULTURAL BORDERS

A naval unit cannot enter another civilisation's cultural borders unless its civilisation has an Open Borders agreement with that civ. Otherwise, such a movement constitutes an act of war. (Exception: see caravels and submarines, pages 115 and 117.)

Naval Combat

Naval units can only fight other naval units; they cannot attack land units – though some can "bombard" coastal cities. See "Air Units" to learn how naval and air units interact.

Naval combat occurs when a naval unit attempts to enter an enemy naval unit's space – in other words, exactly like land combat. The results too are like those from land combat – if the attacker loses, the attacking unit is destroyed. If the defender loses, the attacker occupies the defender's space, unless other enemy units still occupy that space.

Naval units cannot enter enemy cities, nor can they battle any enemy naval units lurking within.

Naval Transport

Several naval units can "transport" land units. These include galleys, galleons, and transports (a modern unit). Each transport has a different "cargo capacity" that determines how many units it can carry.

LOADING UNITS

To load a land unit onto a transport, move the unit into the transport's space. If the transport occupies a coastal space, the unit loads automatically upon arrival. If the transport is in a city, click on the "load transport" action icon. If the transport is already at its maximum capacity, the unit will not load.

MOVING UNITS

Transporting units has no effect upon the transports; they move like any other naval units.

UNLOADING UNITS

Units can be unloaded into any land square (but see "Amphibious Assault," below). To unload all units onto a single land square, order the transport to move into that square. Or you can activate transported units and order them to unload individually. A transport can pick up and drop off land units at any point during its move.

AMPHIBIOUS ASSAULTS

If a land unit attempts to unload into a space containing an enemy unit, the two units fight it out. If the attacker is successful and the land space is now empty, the attacker occupies that space. If other defenders remain in the target space, the attacker remains aboard the transport.

Land units attacking from transports have their combat strengths reduced by 50%. However, the "Amphibious" promotion negates that penalty.

NAVAL COMBAT WITH TRANSPORTS

If a naval transport is destroyed in combat, all units it carries are destroyed as well. Land units aboard a transport have no effect upon the naval combat.

NAVAL UNIT LIST

Battleship

Tech Requirement: Industrialism

Resource Requirement: Oil or uranium

Strength: 40

Movement: 7

Special Abilities: Causes collateral damage – can damage multiple units when attacking (just like catapult "barrages"). Can bombard city defences (-20%/turn).

Caravel

Tech Requirement: Optics

Resource Requirement: None

Strength: 3

Movement: 4

Special Abilities: Can carry one scout, explorer, missionary, spy or Great Person. Can enter rival civilisations' territory without triggering war.

Carrier

Tech Requirement: Flight

Resource Requirement: Oil or uranium

Strength: 16

Movement: 6

Special Abilities: Can carry 3 fighter or jet fighter units (see "Air Combat").

Destroyer

Tech Requirement: Combustion

Resource Requirement: Oil or uranium

Strength: 30

Movement: 9

Special Abilities: Can see submarines. Can intercept aircraft (30%). Can bombard city defences (-15%/turn).

Frigate

Tech Requirement: Astronomy and chemistry

Resource Requirement: Iron

Strength: 8

Movement: 5

Special Abilities: Can bombard city defences (-10%/turn).

Galleon

Tech Requirement: Astronomy

Resource Requirement: None

Strength: 4

Movement: 5

Cargo Space: 3

Galley

Tech Requirement: Sailing

Resource Requirement: None

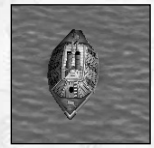
Strength: 2

Movement: 3

Cargo Space: 2

Movement Limits: Must stay on coastline or within friendly cultural waters.

Ironclad



Tech Requirement: Steel and steam power

Resource Requirement: Iron and coal

Strength: 12

Movement: 3

Movement Limits: Must stay on coastline or within friendly cultural waters.

Submarine

Tech Requirement: Radio and combustion

Resource Requirement: Oil or uranium

Strength: 24

Movement: 7

Special Abilities: Invisible to most units except destroyers and other submarines. Can carry one scout, explorer, missionary, spy or Great Person. Can enter rival civilisation's territory without triggering war. Can withdraw from combat (50% chance).

Transport

Tech Requirement: Combustion

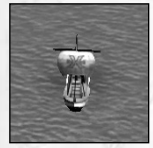
Resource Requirement: Oil or uranium

Strength: 16

Movement: 6

Cargo Space: 4

Work Boat



Tech Requirement: Fishing

Resource Requirement: None

Strength: 0 (non-combat unit)

Movement: 3

Movement Limits: Must stay on coastline or within friendly cultural waters.

Special Abilities: Can create fishing boats, whaling boats, and offshore platforms.

AIR UNITS

First seeing widespread military use in World War I as unarmed reconnaissance vehicles, over the next half-century aircraft would become the most versatile and powerful part of the modern army.

There are two different categories of air units in *Civilization IV*: rotary-wing aircraft and fixed-wing aircraft.

Rotary Wing Aircraft - Gunships

Gunships are heavily armed and armoured helicopters. These powerful modern units are especially adept at destroying enemy tanks and vehicles.

GUNSHIP MOVEMENT

Gunships move like land units, except that they pay 1 movement point to enter all land spaces. Gunships cannot enter water spaces (except when carried aboard a naval transport unit).

GUNSHIP COMBAT

A gunship fights like any other land unit: if it moves into a space containing an enemy unit, it attacks that unit. If an enemy unit moves into its space, it attacks the gunship.

GUNSHIPS VS. CITIES

Gunships can attack and destroy units in cities, but gunships cannot capture enemy cities.

Fixed-Wing Aircraft

There are two categories of fixed-wing aircraft in the game: fighters and bombers.

FIGHTERS

Fighters are proficient at attacking enemy naval units and intercepting enemy fighters. Further, fighters can be based on aircraft carriers. Fighters can attack land units and bombard enemy city defences (though not as effectively as bombers). There are two types of fighters: fighters and jet fighters.

BOMBERS

Bombers can bombard enemy city defences. Further, bombers have a powerful attack against enemy land units. They can attack naval units, as well, but they are less effective

when doing so. Bombers can also attack improvements. Bombers cannot be based on aircraft carriers. Bomber units include bombers and stealth bombers.

Fixed-Wing Aircraft Movement

Fixed-wing aircraft are based in cities (fighters can also be based aboard aircraft carriers). They cannot begin or end a turn elsewhere. Fighters and bombers can "rebase" to another city (or carrier) during their turn. The city can be anywhere on the map, but it must be owned by you or by a civilisation you have an Open Borders agreement with. If an aircraft rebases, it can do nothing else during that turn.

Fixed-Wing Missions

When not rebasing, fixed-wing aircraft can perform a variety of different missions. An aircraft can perform only one mission per turn. Each fixed-wing air unit has a "mission range" rating. An aircraft can perform missions in any space within this range.

AIR STRIKE MISSION

A fixed-wing unit can be ordered to attack any enemy-held space within its mission range.

RECON MISSION

An aircraft can be ordered to perform a recon mission. Click on a space within the unit's range and all units/improvements within range of the recon space will be revealed.

AIR BOMB MISSION

Units can be ordered to bombard enemy city defences or improvements within their mission range. Bombers are far better at these kinds of missions than are fighters.

INTERCEPT MISSION

Fighter units can be ordered on "intercept" missions. They then have a chance to attack any enemy air units that enter their mission range.

LAND UNIT/SEA UNIT INTERCEPTION OF FIXED WING AIRCRAFT

Some land units – SAM infantry and mechanised infantry, to name two – have a chance to intercept enemy air units when the air units attack their square OR an adjacent square. At sea, destroyers have the same opportunity.

AIR UNIT LIST

Bomber

Technology Requirements: Radio and Flight

Resource Requirements: Oil

Air Strength: 16

Mission Range: 8

Special Abilities: Can cause collateral damage. Can bombard city defences (-15%/turn). Can destroy improvements. -50% when attacking naval units.

Fighter

Technology Requirements: Flight

Resource Requirements: Oil

Air Strength: 12

Mission Range: 6

Special Abilities: Can intercept aircraft (40% chance). Can destroy tile improvements. Can bombard enemy city defences (-15%/turn).

Gunship

Technology Requirements: Rocketry and flight

Resource Requirements: Oil

Strength: 20

Movement: 4

Special Abilities: +100% strength when attacking armoured units. 25% chance to withdraw from combat. Pays 1 mp to enter all land spaces. Cannot capture cities. Cannot enter sea spaces (except aboard naval transport). Receives no defensive bonuses for terrain.

Jet Fighter

Technology Requirements:
Composites and flight

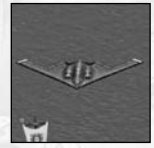
Resource Requirements: Oil and aluminium

Air Strength: 24

Mission Range: 10

Special Abilities: Can intercept aircraft (60% chance).
Can destroy tile improvements. Can bombard enemy city defences (-10%/turn).

Stealth Bomber



Technology Requirements: Composites
and flight and robotics

Resource Requirements: Oil and aluminium

Air Strength: 20

Mission Range: 12

Special Abilities: 50% chance to evade interception.
Can cause collateral damage. Can bombard city defences
(-20%/turn). Can destroy improvements. -50% when attacking naval units.

SPIES

Spies are special "invisible" units which can sneak around the map and have a variety of special abilities. Spies also function defensively by increasing the odds of an enemy spy being exposed if it performs a mission in a nearby tile.

Constructing Spies

Spies may be built only in a city with the Scotland Yard national wonder.

Invisible

Spy units are invisible. They cannot be seen, attacked, or otherwise interacted with.

Movement

Spies move like other units, except that they do not cause an automatic declaration of war when crossing foreign cultural borders. Being invisible, spies can move through neutral, friendly and enemy territory without risk.

Investigate City

When a spy enters a foreign city, you are able to see that city's city screen. This is not a "mission" (see below) and the spy is at no risk.

Spy Missions

Spies may perform a variety of missions, some of which are automatically fatal and others of which contain a chance of destruction. Spies can perform these missions anywhere on the map, including in territory belonging to allies or to civilisations you are at war with.

DESTROY PRODUCTION

A spy performs this mission in a city. If successful, the spy survives and the city loses all production points towards whatever it is currently producing. (This can be quite devastating if the city is just a couple of turns from completing construction of a wonder.) If the mission is unsuccessful, no production is lost and the spy is destroyed.

SABOTAGE IMPROVEMENT

This is performed on any space containing an improvement. If successful, the improvement is destroyed and the spy survives. If unsuccessful, the spy is destroyed and the improvement survives.

STEAL PLANS

This mission has a much higher chance of success in one of a civilisation's "centres of government" – a city containing a Palace, Forbidden Palace or Versailles wonder. If successful, the spy survives and you get to see everything that is visible to the foreign civilisation. This includes everything in its territory or within sight of its units and borders. If unsuccessful, the spy dies and you don't get to see anything.

Determining Success or Failure of a Spy Mission

The odds of success or failure of a spy's mission depend upon the number of units the other civilisation has in the space the mission takes place. If a space is unoccupied, the chances of success are quite high. The chances of detection and failure increase with each unit in the target space.

USING SPIES TO CATCH SPIES

Spies are especially adept at catching and foiling enemy spies. If a spy is in the target space, the chance of exposure increases significantly.

Diplomatic Effects of Missions

If a mission is successful, the target civilisation will not know who performed the mission; thus that civilisation's opinion of you will not change (see "Diplomacy," page 89). If the mission is a failure, the target civilisation will know exactly who is responsible for the outrage and will adjust its opinion of you appropriately. It is quite possible for a failed spy mission to cause the victim civilisation to declare war on your civilisation!

ICBMS

ICBMs (intercontinental ballistic missiles), also known as "nukes," can ruin a leader's whole day. These are the ultimate weapons available in *Civilization IV*, and they are extremely potent.

Acquiring Nukes

To build nuclear weapons, you need the following:

THE MANHATTAN PROJECT WONDER

Someone in the game must have built the Manhattan Project wonder. It needn't be you; once anybody has built the Manhattan Project, everyone can build nukes (if they meet the other requirements).

ROCKETRY AND FISSION

You need to know the Rocketry and Fission technologies to construct nukes.

URANIUM

You need access to the Uranium resource to build nukes. Uranium is revealed by the Physics tech.

Constructing Nukes

You build nukes in a city, just like any other unit.

Launching a Nuke

Nukes have unlimited range: they can reach any space on the map. Once launched, nukes reach their target space and detonate immediately.

Area of Effect

Nukes are "area of effect" weapons; when detonated they cause damage in their target square, but they also cause damage to the eight squares that are adjacent to the target square. In fact, the eight adjacent squares get hit just as hard as the target square.

Damage Effects

BUILDINGS

If a nuke detonates in or adjacent to a city, the computer makes a "kill check" against each building; if the building passes the check, it emerges unharmed. If the target building fails, it is destroyed (but see "bomb shelters," below). Wonders cannot be destroyed by nukes!

UNITS

The computer makes a "kill check" against each unit; if the unit fails the check it is destroyed. If the unit passes the check, it may emerge damaged or unscathed.

IMPROVEMENTS

If a nuke detonates on top of or adjacent to an improvement, that improvement is destroyed.

Fallout

A nuclear detonation may produce "fallout" – radioactive debris – in any of the target squares. Fallout makes the space totally unworkable; in other words, a nearby city cannot draw food, commerce, production, or resources from a square damaged by fallout.

SCRUBBING FALLOUT

Once you have discovered the Ecology technology, your workers can "scrub" (or clean) fallout. Scrubbing fallout is like any other worker action: multiple workers can scrub a space simultaneously to speed the job up; certain civics and wonders may cause workers to scrub fallout faster; and so forth.

SDI and Nukes

The SDI project has an excellent chance of intercepting any nukes targeted at your territory.

Bomb Shelters and Nukes

A bomb shelter in a city reduces damage by 75%.

Diplomatic Penalties

There are serious diplomatic penalties attached to using nukes. Relations with other civilisations are almost certain to drop precipitously, and you may find yourself at the receiving end of someone else's nuclear arsenal. You have been warned!

Global Warming

Use of nuclear weapons may cause Global Warming to begin, turning previously fertile tiles into useless desert. Prolonged nuclear exchanges may eventually transform the world into an uninhabitable wasteland.

PROMOTIONS

As described in "The Basics" portion of the rules, promotions are special abilities awarded to units that are victorious in battle. In addition, some units begin the game with one or more special abilities.

Here's a list of the promotions in *Civilization IV*. Remember that not all promotions are available to all units.

Accuracy

Available To: Siege weapons

Prerequisites: Barrage I

Leads To: Nothing

Effects: +10% city bombard damage.

Ambush

Available To: Siege, gunpowder, armour, and helicopter units.

Prerequisites: Combat II

Leads To: Nothing

Effects: +25% vs. armoured units.

Amphibious

Available To: Recon, archery, mounted, melee, siege, and gunpowder units.

Prerequisites: Combat II

Leads To: Nothing

Effects: No combat penalty for attacking from sea. No combat penalty for attacking across a river.

Barrage I

Available To: Siege and armoured units.

Prerequisites: None

Leads To: Accuracy, Barrage II

Effects: +20% collateral damage

Barrage II

Available To: Armoured units

Prerequisites: Barrage I

Leads To: Barrage III

Effects: +30% collateral damage. +10% vs. melee units.

Barrage III

Available To: Armoured units

Prerequisites: Barrage II

Leads To: Nothing

Effects: +50% collateral damage. +10% vs. gunpowder units.

Blitz

Available To: Mounted, armour, and helicopter units.

Prerequisites: Combat III

Leads To: Nothing

Effects: Can attack multiple times per turn.

Charge

Available To: Mounted, melee, armoured, and helicopter units.

Prerequisites: Combat II

Leads To: Nothing

Effects: +25% vs. siege weapons.

City Garrison I

Available To: Archery, gunpowder units.

Prerequisites: None

Leads To: City Garrison II

Effects: +20% city defence.

City Garrison II

Available To: Archery and gunpowder units.

Prerequisites: City Garrison I

Leads To: City Garrison III

Effects: +25% city defence.

City Garrison III

Available To: Archery and gunpowder units.

Prerequisites: City Garrison II

Leads To: Nothing

Effects: +30% city defence. +10% vs. melee units.

City Raider I

Available To: Melee, siege, and armoured units.

Prerequisites: None

Leads To: Accuracy, City Raider II

Effects: +20% city attack.

City Raider II

Available To: Melee, siege, and armoured units.

Prerequisites: City Raider I

Leads To: City Raider III

Effects: +25% city attack.

City Raider III

Available To: Melee, siege, and armoured units.

Prerequisites: City Raider II

Leads To: Nothing

Effects: +30% city attack. +10% vs. gunpowder units.

Combat I

Available To: Recon, archery, mounted, melee, siege, gunpowder, armoured, helicopter, and naval units.

Prerequisites: None

Leads To: Medic I, Combat II

Effects: +10% strength.

Combat II

Available To: Recon, archery, mounted, melee, siege, gunpowder, armoured, helicopter, and naval units.

Prerequisites: Combat I

Leads To: Amphibious, Combat III, Formation

Effects: +10% strength.

Combat III

Available To: Recon, archery, mounted, melee, siege, gunpowder, armoured, helicopter, and naval units.

Prerequisites: Combat II

Leads To: Combat IV, Sentry

Effects: +10% strength.

Combat IV

Available To: Recon, archery, mounted, melee, siege, gunpowder, armoured, helicopter, and naval units.

Prerequisites: Combat III

Leads To: Combat V, Commando

Effects: Heals additional 10% damage/turn in neutral lands. +10% strength.

Combat V

Available To: Recon, archery, mounted, melee, siege, gunpowder, armoured, helicopter, and naval units.

Prerequisites: Combat IV

Leads To: Nothing

Effects: Heals additional 10%/turn in enemy lands. +10% strength.

Commando

Available To: Recon, archery, mounted, melee, gunpowder, and armoured units.

Prerequisites: Combat IV

Leads To: Nothing

Effects: Can use enemy roads.

Cover

Available To: Melee and gunpowder units.

Prerequisites: Combat I

Leads To: Nothing

Effects: +25% vs. archery units.

Drill I

Available To: Archery, siege, armoured, helicopter, and naval units.

Prerequisites: None

Leads To: Drill II

Effects: +1 additional first strike chance.

Drill II

Available To: Archery, siege, armoured, helicopter, and naval units.

Prerequisites: Drill I

Leads To: Drill III

Effects: 1 extra first strike.

Drill III

Available To: Archery, siege, armoured, helicopter, and naval units.

Prerequisites: Drill II

Leads To: Drill IV

Effects: +2 first strike chances.

Drill IV

Available To: Archery, siege, armoured, helicopter, and naval units.

Prerequisites: Drill III

Leads To: Nothing

Effects: 2 first strikes. +10% vs. mounted units.

Flanking I

Available To: Mounted, armoured, helicopter and naval units.

Prerequisites: None

Leads To: Flanking II, Navigation I

Effects: +10% withdrawal chance.

Flanking II

Available To: Mounted, armoured, helicopter and naval units.

Prerequisites: Flanking I

Leads To: Mobility

Effects: +20% withdrawal chance. Immune to first strikes.

Formation

Available To: Archery, mounted, melee, and gunpowder units.

Prerequisites: Combat II

Leads To: Nothing

Effects: +25% vs. mounted units.

Guerrilla I

Available To: Recon, archery, and gunpowder units.

Prerequisites: None

Leads To: Guerrilla II

Effects: +20% hills defence.

Guerrilla II

Available To: Recon, archery, and gunpowder units.

Prerequisites: Guerrilla I

Leads To: Nothing

Effects: Double movement in hills. +30% hills defence.

March

Available To: Recon, archery, mounted, melee, siege, and gunpowder units.

Prerequisites: Medic I

Leads To: Nothing

Effects: Can heal while moving.

Medic I

Available To: Recon, archery, mounted, melee, siege, gunpowder, and naval units.

Prerequisites: Combat I

Leads To: Medic II, March

Effects: Heals units in same tile +10% damage per turn.

Medic II

Available To: Recon, archery, mounted, melee, siege, gunpowder, and naval units.

Prerequisites: Medic I

Leads To: Nothing

Effects: Heals units in same and adjacent tile +10% damage per turn.

Mobility

Available To: Mounted and armoured units.

Prerequisites: Flanking II

Leads To: Nothing

Effects: All terrain costs 1 mp to enter.

Navigation I

Available To: Naval units

Prerequisites: None

Leads To: Navigation II

Effects: +1 movement range.

Navigation II

Available To: Naval units

Prerequisites: Navigation I

Leads To: Nothing

Effects: +1 movement range.

Pinch

Available To: Mounted, gunpowder, armoured, and helicopter units.

Prerequisites: Combat I

Leads To: Nothing

Effects: +25% vs. gunpowder units.

Sentry

Available To: Recon, mounted, helicopter and naval units.

Prerequisites: Combat III

Leads To: Nothing

Effects: +1 visibility range.

Shock

Available To: Archery, mounted, melee, and siege weapons.

Prerequisites: Combat I

Leads To: Nothing

Effects: +25% vs. melee units.

Woodsman I

Available To: Recon, melee, and gunpowder units.

Prerequisites: None

Leads To: Woodsman II

Effects: +20% jungle defence. +20% forest defence.

Woodsman II

Available To: Recon, melee, and gunpowder units.

Prerequisites: Woodsman I

Leads To: Nothing

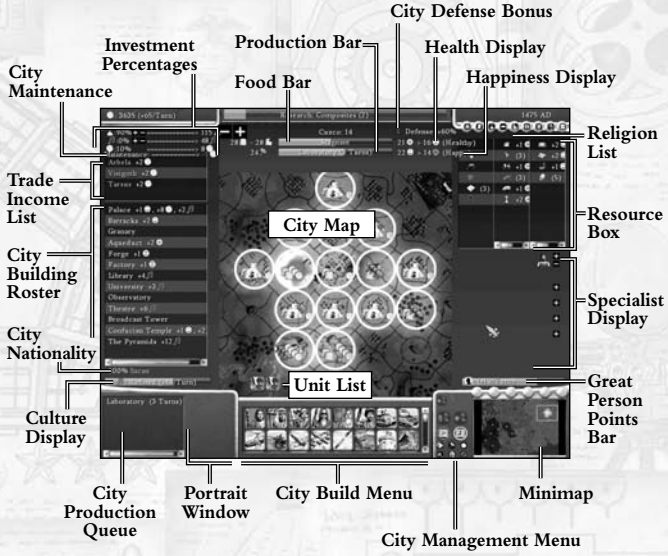
Effects: Double movement in jungle and forest. +30% jungle and forest defence.

CITIES

Players new to *Civilization IV* and its predecessors might want to play a couple of games before taking on this section. Once you've had a chance to poke around a bit on the City Screen, you should be familiar enough to tackle advanced management of cities. Veterans of previous Civilization games may feel comfortable enough to jump right in and start reading.

THE CITY SCREEN

To open the City Screen, [double-click] on a city on the main map. (Click on the city artwork itself, not on the city's name – the name brings up a "light" version of the City Screen.) This is where most city management take place. The following diagram demonstrates a typical city in *Civilization IV*:



City Name

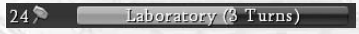
The name of the city is listed at the top of the city screen. Displayed next to it is the city's current size. For each population point that a city has, it possesses one citizen who can either work the land (by selecting any tile in the City Map at the centre of the screen) or become a specialist (by using the Specialist Display on the right side of the city screen).

Food Bar

Directly underneath the city's name is the Food Bar. On the left side of the bar is displayed the amount of food that is currently being produced and the amount currently being eaten by the people of the city. Each population point requires two food under normal circumstances; if a city has become unhealthy, it may require additional food (see below). If the city's food supply exceeds the amount needed to feed its people, the Food Bar will begin to fill up and the city will begin to grow. When the Food Bar is completely full, the city gains one population point. (Conversely, if a city does not have enough food to support its population, the Food Bar will shrink and starvation will occur if it is completely empty!)

The Food Bar will usually show the number of turns needed for the city to increase in size; moving the mouse over the Food Bar will show the exact amount of food stored at the moment and the amount needed to grow.

Production Bar



Underneath and accompanying the Food Bar is the Production Bar. On the left side of the bar is displayed the current amount of production that the city creates each turn. The centre of the bar shows what the city is currently producing (which could be a unit, building, or wonder) and how many turns it will take for the current project to be completed. [Rolling over] the Production Bar will also show the exact amount of production carried out on the current project so far, and the amount needed for completion.

As each turn passes, the Production Bar will fill up until whatever the city is working on is completed. You will then be prompted to select a new project for the city to begin working on, and the process begins all over again.

City Defence Bonus

Listed to the right of the City Name is the city's Defence Bonus. This is the bonus that all units defending in the city will receive. Remember that the city gets a defensive bonus from constructing walls and castles, and it also gets a defensive bonus from advanced culture. Units inside the city get the higher of the two bonuses, and that's what's displayed here.

Health Display 21 > 16 (Healthy)

To the right of the Food Bar is the city's Health Display, showing both the amount of Health and Unhealthiness in the city. In *Civilization IV*, each additional population point adds one point of unhealthiness (indicated by the green unhealthy face icon) to a city. Constructing certain buildings such as forges and factories or founding a city in terrain such as jungles or floodplains will also add unhealthiness to a city. [Roll over] the green unhealthy face to see where all of the unhealthiness is coming from.

To combat unhealthiness, a city must possess corresponding health points, indicated by a "Red Cross" icon. Cities receive health from being constructed on fresh water, from certain buildings like aqueducts and hospitals, and from health resources like wheat and cows. [Roll over] the health icon to learn where the current sources of health are coming from.

A city that has more health than unhealthiness or an equal number of both suffers no unusual effects. A city with more unhealthiness than health requires one additional food point for each unhealthy face beyond the health limit. For example, a city of size 10 would usually require 20 food to feed all of its citizens; if the city has two more unhealthy faces than health points, it would require 22 food to feed all of its people. Be careful about growing cities larger than their health will support: cities that are too unhealthy will not have enough food to support them and will begin to starve.

Happiness Display 22 > 14 (Happy)

Below the Health Display is the Happiness Display, showing both the number of Happy Faces and Unhappy Faces in the city. In a process similar to unhealthiness, each population point adds one unhappy face (indicated by the red unhappy face icon) to a city. Fighting long wars or possessing cities with peoples of foreign nationalities in them may also cause unhappy faces to appear in a city. [Rolling over] the red unhappy face icon will show all of the sources of unhappiness in a city.

You will want to combat unhappiness with additional happy faces, which are indicated by a smiling yellow face next to the unhappy face icon. Cities can receive extra happy faces from having a religion in the city, from certain buildings like temples and colosseums, from happiness-producing resources like furs or dyes, and from many other sources. (Remember you can get resources from trade as well as from domestic sources.) [Roll over] the happy face icon to see where a city's happiness is coming from.

A city with more happy faces than unhappy ones or equal numbers of both suffers no unusual effects. Cities with more unhappy faces than happy ones will result in unhappy citizens, one for each unhappy face in excess of the number of happy faces (a city with 7 happy faces and 9 unhappy ones will have 2 unhappy citizens). Unhappy citizens eat food just like regular ones, but they refuse to do any work and contribute nothing to your civilisation. In extreme cases, this may result in starvation as the unhappy citizens refuse to work the fields and bring in additional food. Since unhappy citizens are nothing more

than a drain on your cities, it is rarely a good idea to let your cities exceed their happiness limit, even if the city has the food to do so.

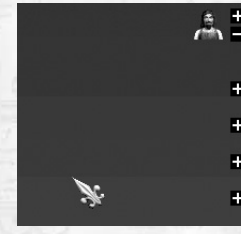
Religion List

To the right of the City Defensive Bonus is the city's Religion List, showing all of the religions that are present in the city. If this city is the Holy City for a religion, that religion will have a gold star next to its icon. You can see all of the effects that a religion is having in the city by [rolling over] its icon.

Resource Box

Below the Religion List is the Resource Box. This box is divided into three sections, showing (from left to right) all of the strategic, health, and happiness resources that the city has access to. In order to have access to a resource, the resource must be improved and within the city's "city radius" or directly connected to the city by road, rail, river or coast. To receive the benefits of resources gained through trade, the city must be connected to your civilisation's capital via a trade network (see page 65). An icon will appear in the resource box for each resource that is present in the city; if you have more than one of the same kind of a resource, a number will appear next to it telling you how many your civilisation possesses.

Specialist Display



Directly below the Resource Box is the Specialist Display. This consists of six faces which may or may not have plus (+) and minus (-) signs next to them; from top to bottom the specialists are the Engineer, the Merchant, the Scientist, the Artist, the Priest, and the Citizen. If you have merged any Great People into a city to function as a super specialist (see section on Great People, page 82), they will appear just below the pictures of the normal specialists.

At the start of a game, the only specialist that can be created is the Citizen, which adds one point of production to the city. As your city creates additional buildings, you will gain access to the other specialists; for example, the Library allows a city to create two Scientists, and a Temple allows a city to create a Priest. Also note that the Caste System civic allows a city to create unlimited numbers of Merchants, Scientists, and Artists, regardless of whether or not the city has the buildings it would normally take to create them.

In order to create a specialist, click on one of the tiles being worked on the City Map

(these tiles have large white circles around them). This will remove one of the city's population points from working the land and create a Citizen specialist. You can then click on the plus (+) sign next to one of the other specialists and the Citizen specialist will become that specialist. To remove a specialist, click on the minus (-) sign next to its name; this will turn the specialist back into a Citizen (and you can then click on a map tile to put that citizen back to work).

It is important to keep in mind that specialists still require two units of food, so creating too many specialists can drop a city into starvation. Generally speaking, cities with lots of food will be able to run the most specialists.

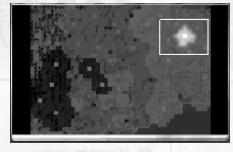
All specialists except for Citizens also create Great Person points; see the following section for more information on how this works.

Great Person Points Bar

Directly below the Specialist Display is the Great Person Points Bar, which keeps track of a city's progress towards generating a Great Person. All specialists except the Citizen generate points towards the creation of Great People, with the type of points generated matching the type of the specialist. In other words, Engineers generate points towards the creation of Great Engineers, Priests towards Great Prophets, etc. Under ordinary conditions, each specialist generates 3 great person points each turn, although this can be increased by certain leader traits, wonders, and civics. Wonders also generate great person points in small amounts.

The Great Person Points Bar shows how far along your city is towards generating a Great Person. The bar begins at 0, and when it fills up all the way, a great person is generated in the city. The bar displays how many great person points are being produced each turn; [roll over] the bar to find out exactly how many points have been generated so far and how many are still needed, as well as what the odds are of generating each type of great person. If you want to generate a specific type of great person, try creating more of the specialists associated with that great person (for example, merchants for a great merchant or artists for a great artist).

Minimap



The standard minimap from the main game screen also appears on the city screen, below the Great Person Points Bar. The minimap will show you where the city you are looking at is located.

City Management Menu

The small box just to the left of the minimap contains the City Management Menu, which has two distinct functions. First of all, it contains the "hurry"

production options for the city, and secondly it holds the city's governor controls.

The topmost button on the City Management Menu is the Draft button; clicking on this button will draft a free unit to help defend the city. Drafting requires the Nationhood civic, reduces the city's population, and causes unhappiness, so it should not be used frivolously.

Below the Draft button are the two hurry production options. The button on the left requires the Slavery civic and sacrifices some of the city's population to complete production. The button on the right requires the Universal Suffrage civic and requires the expenditure of gold to hurry production. Each of these buttons will be lit up only if the appropriate civics are being employed; otherwise they are greyed-out and cannot be used. [Roll over] each button to see additional information about their costs.

The bottom eight buttons allow you to interact with the city's governor and issue instructions on how you would like the city to be run. The button with a hammer in the middle of a circle is the Production Automation control; by clicking this button, you give the governor control over production in the city. (Be warned that the governor may not make the same choices that you would!) The circular button to the right of this is the Citizen Automation control; clicking this button gives the governor permission to manage the city's population points as it sees best.

The governor will usually try to adopt a balanced mix of food, production, and commerce, but you can give it further instructions with the six small buttons at the bottom of the City Management Menu. The Emphasize Food button tells the governor to concentrate on growth, the Emphasize Production button will focus on providing the maximum number of hammers, and the Emphasize Commerce button will concentrate on bringing in the most total commerce. Below these are the Emphasize Research button (which naturally focuses on science), Emphasize Great People (which will try to run the maximum amount of specialists to bring in more great people), and finally Avoid Growth (which will halt the city's growth at the current level; it may sometimes be preferable to stop a city from growing and producing unhappy citizens). You can also combine these buttons to give multiple commands to the governor; it is possible to tell the governor to both Emphasize Great People and Avoid Growth at the same time, for example.

City Build Menu

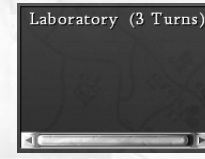
The City Build Menu is located at the bottom of the city screen, to the left of the City Management Menu. This is where you can select what the city should construct next: a unit, a building, or a wonder. The City Build menu is scrollable; it contains a list of icons showing everything that the city can build, starting with units and then proceeding through buildings, wonders, and (eventually) spaceship parts. Some of these icons may be grayed out, indicating that your city lacks a certain requirement to build it. [Roll over] over the icon to learn what your

city needs in order to produce it. (You can also [roll over] any of the lighted icons to learn more info about them.)

Portrait Window

To the left of the City Build Menu is the Portrait Window, which shows a three-dimensional image of whatever the city is building.

City Production Queue



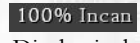
Located to the left of the Portrait Window in the bottom-left corner of the city screen is the Build Queue. This is a list of all of the different projects that the city has assigned to it, with the current project listed at the top. Ordinarily a city will only have one task assigned to it, but you can set a build list for the city's governor to follow by [Shift-clicking] on items in the City Build Menu. As each project is completed, the next one in the queue will move up to take its place. To remove a project from the Production Queue, click on it with the mouse.

Culture Display

Above the Portrait Window and City Production Queue is the city's Culture Display, an indicator of how much culture the city is producing. The culture display lists the rate at which culture is being accumulated each turn, and displays a word indicating the city's current cultural level – None, Poor, Fledgling, etc. – each cultural level grants the city a 20% defensive bonus.

[Roll over] the Culture Display to see exactly how much culture exists in the city and how much is necessary to reach the next cultural level.

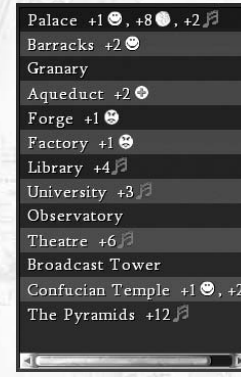
City Nationality



Directly above the Culture Display is the City Nationality, a percentage indicator of how many citizens of your nationality the city contains. (Remember that people of foreign nationalities will become unhappy if you go to war with their civilisation.)

City Buildings Roster

Most of the left side of the city screen is taken up by the City Building Roster, a list of all buildings and wonders present in the city. The city building roster displays any culture, gold, or happy faces added by each individual building/wonder; you can get additional information about each by [rolling over] it.



Trade Income Routes

Above the City Building Roster is the Trade Income List, a display of all of the trade routes that the city possesses. Trade routes in *Civilization IV* are generated automatically between cities, with each city forming the most profitable trade routes possible. At the beginning of the game, each city can only have one trade route, but additional technologies, buildings, wonders, and certain civics increase the amount of trade routes that a city can have. Trade routes can run to the cities of your own civ or to those of foreign civilisations; foreign trade routes are almost always more lucrative, but require an Open Borders agreement with the other civs. Certain buildings like harbors can increase revenue from trade routes.

Trade routes increase the base commerce of a city. If a city has three trade routes that are each bringing in 10 commerce, that city has an additional 30 base commerce that can be applied to science, wealth, or culture. If your civilisation signs a number of Open Borders agreements, trade route income can be extremely profitable and help speed along the progress of your civ's scientific research.

City Maintenance

Just above the Trade Income List is the City Maintenance display. In a nutshell, this tells you how much it costs your civilisation to maintain this city. Your capital city starts out with a maintenance cost of 0, but as you found more cities they will begin costing your civilisation gold. Maintenance costs arise from two different sources: the distance of the city from the capital and the total number of cities in your civilisation. [Roll over] the City Maintenance display to see what is driving this city's maintenance costs.

There are several ways to deal with city maintenance costs. One of the best is to build courthouses in most cities. Each courthouse reduces its city's maintenance costs by 50%. Building enough courthouses will also allow your civilisation to build the Forbidden

Palace, which acts as a second capital and helps control the maintenance costs created by your cities' distance from the capital.

Finally, the State Property civic removes all maintenance costs caused by distance from the capital.

Note that courthouses and State Property are not easily accessible during the early game, and you always should be careful of growing your civilisation beyond its means. Expanding too far too fast will drain your treasury of gold and reduce the rate at which your civilisation conducts research.

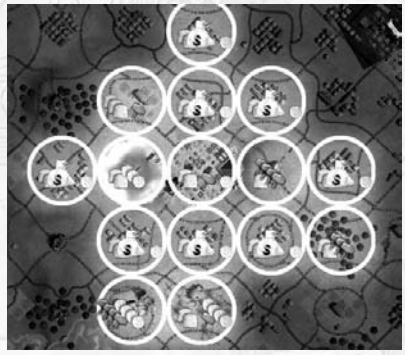
Investment Percentages

In the top left corner of the City Screen are the investment percentages, one for research, one for gold, (and later on) one for culture. These are the same investment percentages that appear on the Main Screen (they can be adjusted here on the City Screen as well as on the Main Screen). The City Screen shows exactly how many research points, gold, and culture are being generated in this particular city using the current investment percentages. The percentages dictate how much of the city's total commerce is going into each category.

As usual, [roll over] each investment percentage to get a more detailed breakdown of how the city's commerce is being spent. For example, let's say a city has 30 total commerce, running 80% science and 20% wealth, with a library (+25% research) and one scientist specialist (+3 research points). [Rolling over] the investment percentages will inform you that the city is producing 6 gold each turn (20% of 30 = 6) and producing 24 base research points (80% of 30 = 24), with a total of 34 research points after the scientist and library are factored in ((24 + 3) x 1.25 = 33.75).

Increasing the amount that your civilisation invests in culture adds 1 happy face to each of your cities, more if the cities contain theatres, broadcast towers, or coliseums.

City Map



The large map that takes up most of the centre of the screen is the City Map. Here you can manually pick which tiles of the city's land that you want its population to be working. Careful management of what tiles your cities are working can be of huge benefit to the growth and development of your civilisation. For every population point that the city possesses, you can pick one tile for its people to work (you can also assign specialists if desired, see above). Working tiles are indicated by large white circles.

Every tile produces a certain amount of food, production, and commerce. More food will let your city grow faster, more production lets it build things faster, more commerce speeds along research – it is up to you to decide which is most important at any one point in time.

Remember that you aren't required to manually assign your populace to work tiles; the city governor does that for you automatically. Left alone, governors generally try to choose a balanced approach between food, production, and commerce, but you can issue additional instructions to the governor using the City Management Menu (see page 138).

To change the tiles that a city is working, click on one of the tiles with a white circle around it. This will remove that population from working the tile and create a Citizen specialist. Then click again on whichever tile you want the city to work, and the Citizen specialist will go back to working the land on the new tile you have selected.

Unit List

Any units that are stationed inside a city will appear at the bottom of the City Map. You can see each unit's stats by [rolling over] its icon. If there are more units than can fit on the screen, click on the plus (+) and minus (-) signs to scroll through them all.

CIVILISATIONS

Following is a list of all of the civilisations appearing in the game, as well as each civilisation's unique units, leaders, and leader traits.

LEADER TRAITS

Each leader has two "traits" which give him or her special abilities in the game. The traits are:

Aggressive

Effect: Free promotion (Combat I) for all melee and gunpowder units.
Construct at 1/2 Production Cost: Barracks, Drydocks

Creative

Effect: +2 culture per turn per city.
Construct at 1/2 Production Cost: Colloseum, Theatre

Expansive

Effect: +2 health per city
Construct at 1/2 Production Cost: Granary, Harbor

Financial

Effect: +1 commerce on spaces generating 2 or more commerce.
Construct at 1/2 Production Cost: Bank

Industrious

Effect: +50% wonder production.
Construct at 1/2 Production Cost: Forge

Organised

Effect: -50% civic upkeep cost.
Construct at 1/2 Production Cost: Courthouse, Lighthouse

Philosophical

Effect: +100% Great People birth rate.
Construct at 1/2 Production Cost: University

Spiritual

Effect: No anarchy
Construct at 1/2 Production Cost: Temples

CIVILISATION LIST

See the Civilopedia for historical backgrounds on each civilisation.

American Empire

Starting Technologies: Agriculture, Fishing

Unique Unit: Navy Seal (replaces marine)

Leader 1: Roosevelt

Trait: Industrious

Trait: Organised

Favourite Civic: Universal Suffrage

Leader 2: Washington

Trait: Financial

Trait: Organised

Favourite Civic: Universal Suffrage

Arabian Empire

Starting Technologies: Mysticism, The Wheel

Unique Unit: Camel Archer (replaces knight)

Leader: Saladin

Trait: Philosophical

Trait: Spiritual

Favourite Civic: Theocracy

Aztec Empire

Starting Technologies: Mysticism, Hunting

Unique Unit: Jaguar (replaces swordsman)

Leader: Montezuma

Trait: Aggressive

Trait: Spiritual

Favourite Civic: Police State

Chinese Empire

Starting Technologies: Agriculture, Mining

Unique Unit: Cho-Ko-Nu (replaces crossbowman)

Leader 1: Mao Zedong

Trait: Philosophical

Trait: Organised

Favourite Civic: State Property

Leader 2: Qin Shi Huang

Trait: Industrious

Trait: Financial

Favourite Civic: Police State

Egyptian Empire

Starting Technologies: The Wheel, Agriculture

Unique Unit: War Chariot (replaces chariot)

Leader: Hatshepsut

Trait: Spiritual

Trait: Creative

Favourite Civic: Hereditary Rule

English Empire

Starting Technologies: Fishing, Mining

Unique Unit: Redcoat (replaces rifleman)

Leader 1: Elizabeth

Trait: Philosophical

Trait: Financial

Favourite Civic: Free Religion

Leader 2: Victoria

Trait: Expansive

Trait: Financial

Favourite Civic: Representation

French Empire

Starting Technologies: The Wheel, Agriculture

Unique Unit: Musketeer (replaces musketman)

Leader 1: Louis XIV

Trait: Industrious

Trait: Creative

Favourite Civic: Hereditary Rule

Leader 2: Napoleon

Trait: Aggressive

Trait: Industrious

Favourite Civic: Representation

German Empire

Starting Technologies: Hunting, Mining

Unique Unit: Panzer (replaces tank)

Leader 1: Bismarck

Trait: Expansive

Trait: Industrious

Favourite Civic: Representation

Leader 2: Frederick

Trait: Philosophical

Trait: Creative

Favourite Civic: Universal Suffrage

Greek Empire

Starting Technologies: Fishing, Hunting

Unique Unit: Phalanx (replaces spearman)

Leader: Alexander

Trait: Philosophical

Trait: Aggressive

Favourite Civic: Hereditary Rule

Incan Empire

Starting Technologies: Agriculture, Mysticism

Unique Unit: Quechua (replaces warrior)

Leader: Huayna Capac

Trait: Aggressive

Trait: Financial

Favourite Civic: Hereditary Rule

Indian Empire

Starting Technologies: Mysticism, Mining

Unique Unit: Fast Worker (replaces worker)

Leader 1: Asoka

Trait: Spiritual

Trait: Organised

Favourite Civic: Universal Suffrage

Leader 2: Gandhi

Trait: Spiritual

Trait: Industrious

Favourite Civic: Universal Suffrage

Japanese Empire

Starting Technologies: Fishing, The Wheel

Unique Unit: Samurai (replaces maceman)

Leader: Tokugawa

Trait: Aggressive

Trait: Organised

Favourite Civic: Mercantilism

Malinese Empire

Starting Technologies: The Wheel, Mining

Unique Unit: Skirmisher (replaces archer)

Leader: Mansa Musa

Trait: Spiritual

Trait: Financial

Favourite Civic: Free Market

Mongolian Empire

Starting Technologies: Hunting, The Wheel

Unique Unit: Keshik (replaces horse archer)

Leader 1: Genghis Khan

Trait: Aggressive

Trait: Expansive

Favourite Civic: Police State

Leader 2: Kublai Khan

Trait: Aggressive

Trait: Creative

Favourite Civic: Hereditary Rule

Persian Empire

Starting Technologies: Agriculture, Hunting

Unique Unit: Immortal (replaces chariot)

Leader: Cyrus

Trait: Expansive

Trait: Creative

Favourite Civic: Representation

Roman Empire

Starting Technologies: Fishing, Mining

Unique Unit: Praetorian (replaces swordsman)

Leader: Julius Caesar

Trait: Expansive

Trait: Organised

Favourite Civic: Representation

Russian Empire

Starting Technologies: Hunting, Mining

Unique Unit: Cossack (replaces cavalry)

Leader 1: Catherine

Trait: Creative

Trait: Financial

Favourite Civic: Hereditary Rule

Leader 2: Peter

Trait: Philosophical

Trait: Expansive

Favourite Civic: Police State

Spanish Empire

Starting Technologies: Fishing, Mysticism

Unique Unit: Conquistador (replaces knight)

Leader: Isabella

Trait: Spiritual

Trait: Expansive

Favourite Civic: Police State

DIFFICULTY LEVELS

As you improve at playing the game, you may want to increase the difficulty level to provide greater challenges for your civilisation to overcome. This section details what actually takes place when you change the difficulty level.

SETTING DIFFICULTY

The difficulties range from Settler (used for the Tutorial) up through Noble (the default difficulty level) eventually to Deity (a nearly impossible level!). You choose which difficulty to play at during the game setup. There is no way to change the difficulty once a game has begun. (For a Custom Game, you can select the difficulty by changing your own difficulty setting in the drop-down menu.)

EFFECTS OF HIGHER DIFFICULTY

Increasing the difficulty level will have the following effects.

Barbarians

On the lower difficulties, your units enjoy substantial advantages in combat against barbarian animals and units. As the difficulty increases, these combat bonuses decrease until they disappear entirely. Barbarians appear more often and are more numerous on the higher difficulties as well – and they start appearing sooner too.

Free Units

You receive a larger number of "free units" on the lower difficulties; in other words, you can build more units before having to pay gold to support them. This number declines as the difficulty level increases.

Research

Techs are cheaper to research on the lower difficulty levels, more expensive on the higher ones.

Maintenance Costs

Maintenance costs, civic costs, and inflation also all increase with difficulty level. The net result is that you will have a much more strained budget on the higher difficulties.

Health and Happiness

All of your cities always start with a certain amount of health and happiness. This amount decreases as the difficulty increases; for example, cities start with 3 health and 6 happiness on Chieftain, but only 1 health and 3 happiness on Deity. Your cities thus hit the health and happiness limits much sooner on the higher difficulties.

Artificial Intelligence Penalties

The difficulty level affects how quickly the AI civilisations develop and expand. On the lowest difficulty levels, it takes the AI civs longer to train units, construct buildings and wonders, grow their cities and research technologies. On Noble difficulty they play under the same conditions as the human players, and on higher difficulties they receive discounts on these items.

AI Freebies

On the higher difficulty levels, the AI begins receiving extra units to start the game. Notable jumps in difficulty come from the free worker that the AI civs start with on Monarch, the 2 free workers they get on Immortal, and the free settler they get on Deity. The AI civs also start with additional technologies on the higher difficulties.

Tribal Villages

The results that you get from entering tribal villages also scale by difficulty; in other words, you are more likely to get something really good on the lower difficulties. Note that it is only possible to get a Settler or a Worker from a village on Warlord or lower difficulties.

THE OPTIONS SCREEN

The "Options Screen" allows you to customize many aspects of *Civilization IV*, including game information displayed, unit activation, shortcut keys, graphic and audio details, and the game clock.

GETTING TO THE OPTIONS SCREEN

Press [Ctrl-o] to go to the Options Screen. Or press [Esc] (the "Escape" key) while on the Main Screen and then [click] on the "Options Screen" button.

OPTIONS SCREEN ORGANISATION

There are four separate sections to the Options Screen – Game, Graphics, Audio, and Clock. When you first arrive at the Options Screen you are in the "Game" section. [Click] on the labelled buttons at the top of the screen to move between sections. In addition to the section buttons, you'll also find a button leading to the "Profile Management" menu.

PROFILE MANAGEMENT

If you share your computer with others, each player can create a separate "profile," allowing each to set up and save their own options settings.

THE GAME SCREEN

This screen allows you to turn on and off various display and help options. Active options have a check mark on their buttons; inactive options have blank buttons. [Click] on an option button to turn on and off that option.

GRAPHICS MENU

This menu allows you to adjust the game's graphics to better suit your computer and graphics card.

AUDIO SCREEN

The Audio Options Screen allows you to adjust the game's audio output to suit your personal preferences. Once again,

CLOCK SCREEN

The Clock Options Screen lets you turn on and off a clock to time how long you've been playing, as well as set an alarm to let you know when you should stop playing and go to work. Or eat.

THE CUSTOM GAME SCREEN

The Custom Game Screen allows you to "fine-tune" your *Civilization IV* game experience. Though primarily intended to assist in creating multiplayer games, you can do some fairly cool stuff in a solo game, as well.

THE PLAYERS MENU

The Players Menu allows you to choose how many civilisations will appear in your game. You can also choose which civilisations you'll be facing, as well.

Player Menu

Your name always appears in the top slot (assuming that you created the game). You can set the following slots to one of three settings:

Open: Available for other human players. See "Multiplayer Games" for more details.

AI: To be played by an artificial intelligence (standard in a single-player game).

Closed: Nobody will play that slot.

GAME SIZE LIMITATIONS

The maximum number of civilisations in a game is determined by the size of the map. You can play against fewer AIs by setting one or more of the player slots to "closed."

Team Assignment Menu

This allows you to "lock" several civilisations into permanent alliances. To do so, assign both civilisations the same "Team Number." For example, you could play a six-civilisation game where there are three teams of two civs each.

LOCKED ALLIANCES

During play, team-members share line of sight, wonder effects, and technology research. They also share victory and defeat. Team-members always have Open Borders with each other, and they cannot declare war on one-another. If any team-member declares war on another civilisation, all are at war. Though of especial use in multiplayer games, this can make for an interesting single-player experience as well.

Choose Leader Menu

You can choose which leaders will appear in the game. You can also leave some choices random.

Choose Difficulty Menu

Here's where you choose the difficulty of the game. You can only choose difficulty levels for human players (those marked as "open").

Additional Buttons

Certain maps or scenarios may allow you to make other decisions about your game. See the *Civilization IV* website to download new maps and scenarios.

GAME PROFILE

This area of the screen is divided into two sections: "Settings" and "Options." [Click] on the tabs to move between the sections.

Settings

Here you can choose exactly what style of game you will play (like you do when setting up a standard game). "Settings" has the following categories:

MAP
Pick the style of map you want to play on.

MAP SIZE
Determine the size of the map.

CLIMATE
Determine the climate of your world.

SEA LEVEL
Low

Medium

High

GAME ERA
Decide in what historical period you want the game to begin. (Standard games begin in the "Ancient" period. Pick a later period to start play with all civilisations possessing more advanced technologies.)

GAME SPEED
Play an "Epic," "Normal," or "Quick" game.

Options

This screen allows you to modify certain rules of play to provide a different style of gaming experience. For instance, if you choose to play a game with the "Always War" option, all civilisations will always be a war with one-another. There will be no Open Borders agreements, no technology trading, no peace treaties, etc. – just unending battle.

EXITING THE SCREEN

"Go Back" Button

[Click] this to return to the Main Menu. No custom game will begin.

"Launch" Button

[Click] this button to launch your custom game!

MULTIPLAYER GAMES

Multiplayer games allow you to test your skills against real, live human opponents in a variety of formats. Depending on how much time you are willing to spend and the proximity of your playing partners, you choose to play on your LAN, on the Internet, via email, or all on the same machine. For LAN and Internet games, you also have the choice of traditional turns or simultaneous movement.

THE MULTIPLAYER MENU

On the Main Menu, [Click] on Multiplayer to open this menu. Here, you will find the following entries:

LAN Games

[Click] on this option to play a game on your LAN (Local Area Network). When you reach the setup screen, you can either use the buttons on the left to start a new game or scenario or load to load a previous game. If you are trying to join a game, the list to the right will display all visible games on your network. [Click] on the game you would like to join to highlight it and then [Click] the "Join Game" button to proceed. [Click] on "Refresh List] to update the game list

Internet Games

[Click] on this option to play a game on the Internet via GameSpy. The first time you choose this option you will be asked to login to GameSpy. You may either use an existing account or you may choose to sign up for a new one. When you reach the setup screen, you can either use the buttons on the left to start a new game or scenario or load to load a previous game. If you are trying to join a game, the list to the right will display all visible games on your network. [Click] on the game you would like to join to highlight it and then [Click] the "Join Game" button to proceed. [Click] on "Refresh List" to update the game list. The bottom left of the screen will display chat from people in the lobby and the display on the right will show you who is currently in the lobby. There is also a tab to

keep track of your buddies.

Direct IP Connection

[Click] on this option to play on the Internet bypassing the GameSpy lobby screens. The next screen will provide you with the opportunity to either host a new game or scenario or to load a previous save. To join a game, players will have to know the IP address of the host's computer and enter it in the text box on the right.

Hot Seat

[Click] on this option to play a game where everyone takes turns on the same computer. At the end of a turn, the active player will get up from the "Hot Seat" and allow the next player to take their turn.

Play by E-mail

[Click] on this option to play a Hot Seat type game where everyone is on different machines in different locations. Upon completion of a turn, the game state is sent to the next player who then sends the game state on to the next.

After the initial screen(s) for each game type are navigated, players will be able to make game settings on a screen just like the "Custom Game" screen. See the previous section for a description of how this screen works.

MODS

Sid Meier's Civilization IV has been designed to be the most moddable version of *Civ* ever. For the first time ever, we will be providing you, the player, with all of the tools we use internally to make the game what it is. Depending on your skill level, you will be able to do as much as you want to make the scenario or mod of your dreams. There are four levels to fit anyone's level of experience and comfort:

XML

Anyone that is comfortable editing a text file can easily jump in and use the XML (Extensible Markup Language) files to easily change game text and simple rules. You could rewrite all of the diplomacy text, add a new *Civ*, or simply tweak the combat or movement value for a unit.

Python

If you are somewhat comfortable with simple scripting, you can add events to the game. You could make a certain square give your units experience points or have an "Earthquake" destroy a mountain range.

World Builder

You can access the World Builder interface anytime from the game. Here, you can edit the map, placing terrain, rivers, resources, and improvements as you see fit. You can also drop units or cities on the map. You can even adjust the size of cities, place starting locations, or edit starting technologies before saving the map out as a simple scenario you can share with your friends,

Game and AI SDK

In early 2006, we will be delivering this incredibly powerful tool that will allow experienced programmers to "get down to the metal" and tweak the AI or how the game functions.

These descriptions are just the tip of the iceberg. Check the game folder for last-minute updates as well as documents detailing how to use these features and other exciting things. Also, keep checking the *Civ IV* home page for new updates, fan-created content, and new official mods.

AFTERWORDS

BY SOREN JOHNSON

Opportunities like this don't come along every day.

Many, many years ago, when I was probably ten years old, I used to spend the lazy days of summer imagining games with my cousin, Kjell. One week, we wrote up a design for a game about the history of the world. You could create a new world from scratch! And you could play as the Chinese, or the Romans, or the Americans! There would be diplomacy, and combat, and technology, and exploration. Wow, that would just be the coolest game ever – imagine if someone ever made that for our little Apple or Commodore computers!

Of course, we weren't the only ones dreaming of such a game. In fact, there was a palpable sense after Will Wright's SimCity that someone just had to take the next step to include the whole world. It was no surprise that Sid Meier – an already famous game designer – was the one who made it happen. *Civilization* was born in 1991, and the world was hooked.

I started playing the game heavily my first year of college. Somehow, the game was both everything that I had hoped for and also an inspiration for what else might be possible. Being a game about all of human history, nothing was off-topic. Shortly after my graduation, Firaxis Founder & CEO Jeff Briggs gave me an opportunity to help out with his design for *Civilization III*. It was a fantastic experience – one I could never have been prepared for – and we brought some great new elements to the series, especially resources and culture. However, as soon as the game made its rounds, creating a new generation of fans, the questions began: "What about *Civilization IV*?"

Well… that's a fair question.

There are a thousand ways to make a game about all of civilisation – we only get to make one of them. To begin with, we wanted to make a game that stood on its own. Although the game was a sequel, everything in the design was up for grabs. The code-base began from scratch, so we could choose which elements of the series should be kept and which parts could be left behind.

Why did people love *Civ*? It is, of course, no one thing. However, certain patterns do emerge: "If I research Gunpowder, I can build a stronger military;" "If I capture that city, I'll get a new luxury;" "If I build the Pyramids, my cities will blossom;" and – of course – "If I play just one more turn…" The turn-based gameplay is key to a series of overlapping mini-goals which usually lead to the same result: a very late night of gaming. Thus, we knew that the turn – as opposed to the "real-time" structure used by some strategy games – was an essential part of the *Civ* formula.

Conversely, what didn't people like about *Civ*? Too much micro-management was high on the list. City riots were the first to go. Instead of having to monitor your cities each turn to make sure they didn't suddenly go into disorder, we simply made angry citizens unwilling to work. Instead of a one-time event which punished you for not balancing out a complicated equation every turn, angry citizens simply became a balancing factor of your civilisation's

growth. The effect was the same but without the micro-management.

Similarly, we added research and production overflow – meaning that on the turn your city finishes a new building extra production will "spill over" onto your next project. In previous versions, this overflow was wasted, which encouraged players to bounce around their citizens each turn to prevent waste. Once again, a simple change could maintain the old turn-based system minus the micro-management.

We also looked at what game mechanics tripped up new players. One common example involved settlers and workers consuming population – cities could be finished building the units, but they wouldn't pop out unless the city was the correct size. In *Civ IV*, cities simply stop growing while settlers and workers are created (with the food now turned into production). This small difference took out one more little gameplay trap for first-timers.

Next, we examined which base mechanics could be improved or cut. Pollution, for example, was an easy one to take out – everyone hated having to keep stacks of workers around for "whack-a-mole" pollution cleanup in the modern age. Instead, by creating a comprehensive health system, we could deepen the trade system with the addition of "food" resources while presenting the player with a new challenge to tackle. It did put a lot of workers out of a job, though.

Similarly, corruption and waste had never been popular, but we had always assumed they were a necessary drag on player growth. We decided to start from scratch, simply remove the feature and then see how the game evolved without it. This choice led us down some interesting and unexpected paths.

The term "ICS" is a well-known one among our Internet fan base. It stands for "Infinite City Sprawl," meaning that the best strategy in *Civ* games had always been to build as many cities as possible. Corruption and waste were meant to discourage city-building by adding diminishing returns to expansion – your 20th city would be much less productive than your 10th. In the first version of *Civ III* we turned corruption up significantly to – in our minds – once and for all kill ICS.

We were both right and wrong; the change did put an end to building as many cities into as tight a space as possible, but it was also the number one complaint raised against the game. Gamers simply didn't like having their production taken away from them – there was nothing fun about founding a city and then finding out that it can only ever produce one shield per turn.

Once we removed corruption and waste (or – more accurately – never coded them to begin with), some new possibilities emerged. First, a revamped maintenance system could provide a subtle resistance against building more cities being the "only best choice." Instead of tying maintenance to buildings – which actually penalised more developed cities as opposed to the smaller, underdeveloped cities of a classic ICS strategy – we made maintenance a flat cost per city that went up based on empire size. Because each city might be costing you ten gold per turn, underdeveloped ones would be a net loss to your economy. An empire with a strong core could support a number of "colony" cities like this, but basing your whole game around ICS would be very difficult.

However, maintenance created its own new issues. Like all penalties, there is the danger of

it becoming "unfun" – a burden to the player that might balance the game but suck the enjoyment out of it. To solve this problem, we harkened back to a similar problem during the development of *Civ III*. The Golden Ages of that game – a very popular feature – originally began life as Dark Ages! We had wanted to show how the power of empires wax and wane over the centuries, so we implemented a decline phase for each civilisation. It wasn't a whole lot of fun, though. Rather than dropping the feature, we just flipped the concept around. We replaced 20 turns of decline with 20 turns of increased productivity, giving the game a sense of history's cyclical nature while still being fun for the player.

Similarly, we needed a positive feature which also encouraged fewer, larger cities. Otherwise, we would have to turn up maintenance very high – to dangerously "unfun" levels. City specialisation was our solution. In fact, we had always wanted to encourage this type of gameplay; we thought people would enjoy focusing one city on research while focusing another on military and a third on trade. Simply put, if city specialisation became a positive feature, we could lead the game away from ICS by giving players a new, fun goal.

Linking the improvements and resources was our first step. *Civilization* had always had improvements, like mines and farms, as well as resources, like iron and wheat. However, we had never taken the logical next step of combining the two. In *Civ IV*, farms and wheat would both still add +1 food on their own, but a farm combined with wheat would now produce +4 food. The result was that city placement near resources would define their flavour. A city near hills with iron and horses would make a great place for a forge and barracks to crank out knights. Founding along a river near spices and silk would mean increased trade and commerce, encouraging markets and harbours. A settlement in fertile grasslands with wheat and cattle would allow for a high population encouraging city specialists.

Specialists, in fact, needed a major overhaul, and they would be an important key to city specialisation. First, we increased their potency – now, scientists would produce three beakers, engineers two hammers, artists four culture and one gold. More importantly, though, they would provide the backbone of the new Great People system.

Like many of the new features of *Civ IV*, we had always wanted to experiment with this idea, tying in great historical figures like Einstein and Plato and Michelangelo. We grouped these individuals into five broad categories: great artists, engineers, merchants, prophets, and scientists. The system was quite simple – every specialist you created in your city produced great people points each turn. Once enough points accumulated, one of these special units would be born in your city. If your city had focused on artists, you might end up with Beethoven. If the focus was merchants, Marco Polo might appear.

The great people would be powerful, one-use units which could change the course of the game. They could discover a new technology or be combined to trigger a Golden Age. Great engineers could finish a wonder in one turn. Great artists could create a cultural boom in one city. They could also be added as "super-specialists" to a city to permanently increase its output. A great scientist producing extra beakers in your research capital could make a huge difference over the course of an entire game.

Finally, city specialisation was solidified by the National Wonders, which every civilisation

can build one each. This concept existed in *Civ III* but we have adjusted the building effects to encourage specialisation. Wall Street doubles a city's gold output, Oxford doubles the beaker rate, the Hermitage doubles culture points, etc. Other effects include giving extra experience to new military units and increasing the great people birth rate. Each city, however, can only contain two National Wonders, which forces players to spread them out across many cities.

Thus, powerful tools exist for increasing the output of highly developed cities, particularly if they specialise in one area or another. At a higher level, these increased player choices – or as Sid would put it, "interesting decisions" – are a theme which can be found throughout *Civ IV*. A good example is the worker unit, which has commonly been accused of creating late-game tedium. Many fans have even lobbied for eliminating the unit altogether, which certainly is always an option to consider when micro-management becomes a concern.

When we looked at the issue more closely, however, we felt that the problem was not necessarily the unit management but the lack of interesting decisions. (Still, we made one very small change which made a big difference in worker management – by giving them two moves, players could move the workers AND give them an order on the same turn, helping decrease the amount of task juggling.) In previous versions of *Civ*, worker options were mostly limited to farms or mines, increasing food or production. The tedium came from the fact that there were only two choices – and often one of them was the obvious best choice.

Therefore, we added a slew of new worker options. Workshops, windmills, and watermills became new choices for increasing food, production, or commerce depending on the local environment. Cottages created an interesting option for commerce – over time, they would grow into hamlets, then villages, and finally towns, with each level producing more and more commerce. A number of new improvements were created to match the resources, such as pastures for cattle, plantations for silk, and wells for oil.

Another area of the game in which we drastically increased user choice was the civic system, which replaces the old monolithic governments. Instead of static choices, like despotism or republic, the player can now select from a variety of options in five general categories. Free Trade or Environmentalism– Universal Suffrage or Hereditary Rule– Theocracy or Freedom of Religion– This system was obviously inspired by Alpha Centauri although we wanted the choices to be more distinct this time around, encouraging unique playing styles. Representation, for example, gives extra research for all specialists while Mercantilism provides a free specialist in each city, which creates a powerful combination.

The tech tree layout was also drastically changed to increase player choice. We dropped the distinct eras of *Civ III*, which often hemmed in the player by limiting research options. Further, we introduced "or" gates into the tree. All previous versions of the game had used "and" gates exclusively (you must have Code of Laws AND Philosophy to research the Republic). *Civ IV* allows alternate paths via "or" gates (you only need Guilds OR Education to research Gunpowder). This one change breathed new life into the tech tree – each trip through it could be radically different.

This development was exciting from a historical point of view as well – *Civilization* is a game

about alternative histories, yet too often the tree mapped out only what did happen instead of what could have happened. Does a civilisation actually need Flight to discover Rocketry, or could scientists simply be inspired by Artillery? Playing a game of *Civilization* should inspire the imagination to consider the alternative paths history could have taken, and the new, more open tech tree explores many of these possibilities.

Speaking of alternative histories, the introduction of real world religions to *Civ IV* created some other interesting possibilities. What if the Aztecs founded Buddhism? What if Rome had not adopted Christianity, helping to spread it in the classical age? What if Judaism had developed a missionary tradition? For *Civ IV*, the introduction of religion creates a new gameplay vector which stands on its own while also interacting with the other systems. A civilisation with multiple religions can build multiple temples, allowing extra priest specialists. A well-spread state religion could enable a powerful army of holy warriors with the civic Theocracy or a burst of building construction via Organised Religion.

Like many game systems that we have experimented with, though, religion did not become fun until the player was given a level of control over it. Our first attempt at modelling religion involved a complicated, under-the-hood algorithm to model its spread along trade routes from centres of devotion to new lands. This system may have accurately shown how little control political leaders often have over religious fervour, but it was frustrating for players not to have a say in a system so important to the game. Thus, we introduced the missionary unit, allowing players to devote resources to spreading their religion throughout the world.

The most important reason to be proactive in the spread of religion is diplomacy. A problem that diplomacy suffered from in previous *Civ* games was a lack of motive – it often felt quite arbitrary that one civilisation might like you while another hated you. Religion provides a useful back-story to give diplomatic dealings more logic. Choosing a different state religion than your neighbour may lead to animosity and possibly war. However, some well-placed missionaries in their largest cities could sway their people to your own religion, winning a long-term ally.

Indeed, the new leader personalities in *Civ IV* provide many other diplomatic challenges. Many leaders have a favourite civic and might pressure you to follow their lead. Gandhi may encourage you to adopt Universal Suffrage while Mao Zedong pressures you to adopt State Property. Further, the leaders will develop their own allies and enemies, often demanding that you join them in a war or an embargo. It takes quite some skill – especially at the higher difficulty levels – to maintain good diplomatic relations with all the major powers. Indeed, one often has to make a long-term choice of trading partners, knowing that trying to make everyone happy may leave you with no friends at all.

Inevitably, diplomacy will break down with one of your rivals, and war is on. Combat in *Civ IV* has undergone a major overhaul from it predecessors. In fact, combat may have undergone the most radical changes of all. To begin, the old attack and defence values have been combined into a single unit strength value. This change was made to create design space for significant new complexity. Combat units now have special modifiers which are situational. Archers, for example, are stronger when defending a city or a hill; spearmen are stronger when fighting mounted units; horse archers get a bonus when attacking catapults; and so on.

This gameplay encourages a combined-arms approach to combat. Focusing solely on any one specific unit will create an Achilles' heel which can be exploited by an adaptive opponent. Reconnaissance and espionage become increasingly important as knowing your enemy's force-mix ahead of time can provide the edge you need once hostilities begin.

However, as we developed this system, a loophole emerged. Actually, it's an old loophole known within our fan community as the Stack-of-Doom (SoD). Basically, if every unit has a counter, the best strategy is simply to put all of your units in a giant stack. That move will guarantee that – if the stack is attacked – the best possible defender will always be available, thus negating the delicate balance of counter units.

To solve this problem, we drew inspiration from *Civ I*, which had a collateral damage system that killed every unit sharing a tile with a losing defender. While that system was so harsh that we removed it entirely for *Civ III*, a lesser version of this system could solve the SoD problem. Thus, catapults, cannons, and artillery units are not a counter for any one type of unit; instead, they are a counter for a style of play. They are the stack-killers, which creates a great tension between keeping units together for mutual defence and spreading units out to avoid collateral damage.

The other great change to the combat system was the introduction of promotions. Customizing your units was an idea introduced in Alpha Centauri via the Unit Workshop, but its complexity intimidated many players. Further, we wanted a system that felt more "Civ-like" – meaning that special abilities should unlock slowly over time as rewards for the player.

In fact, the system that we wanted sounded very similar to a traditional RPG levelling system. We've never been afraid to borrow a good idea when available – especially from a genre with which many of our fans would already be familiar. Thus, the promotion system was born; units acquire experience points from successful battles, which can then be spent on unique upgrades to specialise the unit.

A swordsman with the City Raider promotion could become a city-killer. A pikeman with the Medic promotion might not only provide protection against knights but also help heal wounded units in the same stack. The units finally develop a personality; players start to think twice before throwing high-ranked troops into the breach. More importantly, the system is simple yet hot and deep – certainly, a strong guiding principle for game design in general.

So… What about *Civ IV*? Well, the time for reading is over. It's best to crack it open yourself. We only hope that you have as much fun playing as we had making.

Before signing off, though, I must take this opportunity to thank the people who made *Civ IV* possible. Every great game has a great team behind it, and I'm afraid they'll never know how much I was humbled by the effort and passion they devoted to the project. Mustafa Thamer, our lead programmer, did an amazing job with making all of my crazy ideas about modding *Civ IV* work. I didn't let on to him when I originally pushed the idea but having a stand-alone game core DLL was always – to me – more a dream than a reality. Thanks, Moose.

Steve Ogden, our lead artist, took on the intimidating task of leading our art team from prototype to production to finished product. It's not easy making art for a game that must be

playable from day one, but he was always ready to meet our needs, no matter how big or small. Dorian Newcomb, our lead animator, was the man who brought the units to life – he taught us that nothing sells an idea like a moving piece of concept art. Further, Dorian has a gift for pointing out great ideas that should have been obvious to everyone but somehow weren't – you know, like metals and mines actually working together!

Our two producers, Barry Caudill and Jesse Smith, somehow found a way to ship this colossus of a product on time – Barry's experience and Jesse's energy were a good match to keep the team moving forward. Tim McCracken, our QA manager, organised and led some 20 testers split between opposite coasts, always keeping us on top of the game's pulse. Paul Murphy, our writer with a gift for the witty aside, wrote and wrote and then wrote some more – not many games top 100,000 lines of text!

Jeff Briggs and Mark Cromer worked together to create the hours of original music filling the game; we are especially proud of the diplomacy music and hope our long-time fans recognise some old themes brought back to life. Michael Curran brought the world to life with a great collection of sound effects.

Our programming team built an amazing world for me to play in as a designer. Tom Whittaker led the effort to create the first ever 3D *Civilization* and always showed patience when my limited graphical background betrayed me. He discovered a way to make tiles work in a 3D environment, creating a world both beautiful and playable – a neat trick. Bart Muzzin built our animation system, gracefully handling one of the biggest shifts during the project – multi-entity units. Sid showed us that they could work in *Sid Meier's Pirates!* and Bart made it happen in a world of much, much larger scale. Nat Duca made contributions both large and small, literally speaking. The epic globe view and the close-up detail of cities and improvements came from his hard work. Jason Winokur created our flexible camera system with a secret ambition – We didn't plan on letting the player fly through the world but Jason made it impossible to resist.

Dan McGarry wrote our multiplayer code, which is quite a challenge for a game that could be played in hours or in months. Emphasising multi-player so early in the process really paid off; we expect to surprise quite a few people with a game as addictive in multi-player as it has always been in single-player. Pat Dawson, a veteran of the old *Civ III* days, built our interface, finally bringing us up-to-date with what modern gamers expect – information at their fingertips and the high-level controls to beat the micro-management. Further, he built the first-ever in-game tech tree built purely dynamically. Hard-coding, be gone!

Eric MacDonald, who created our in-game world-builder, was the man who convinced us that XML was the best way to store data. Modders everywhere should send him a thank you. Alex Mantzaris created the advisor screens and Civilopedia, tasks where his passion for and knowledge of *Civ* played an invaluable role. His eye for detail made all of the pop-up formulas possible. Jon Shafer worked hard with Mustafa to build the infrastructure that makes *Civ IV* a dream for modders – we can hardly wait to watch the fans blow us away.

As for our team of artists, who responded with professionalism and fierce determination to

the monumental task before them, I can only offer my thanks. Justin Thomas single-handedly improved the look and feel of the interface with his beautiful, hand-illustrated icons and buttons. 1,500 of them, in fact! Tom Symonds, who grew from an intern to a full-time employee during the development of *Civ IV*, proved to be a problem solver, a prolific production artist, and a seriously nice guy who really cared about Doing Things Right for the player. He helped develop the resource and improvement system and worked exhaustively to improve the terrain right up until we shipped. Mike Bates was one of the first artists on the project and one of the last to leave, and touched almost every aspect of it. His major contribution, though, was the gorgeous city system he worked to develop with programmer Nat Duca. Greg Cunningham worked tirelessly to help develop the resources and improvements and did some really nice unit animation to boot. Jerome Atherholt was the Hand of the Master, contributing the classic pencil sketches which adorn so many parts of the game. These sketches came to represent the elegant, civilised nature of *Civ IV*. Rob Cloutier, who has an extensive background in cinematics, helped develop many of the movies in the game. He worked with Mike Bates to come up with the opening cinematic and designed the system that allowed us to do the time-lapse construction animations that suit the wonder movies so well. Ed Lynch rose to the mammoth task of developing a facial animation system and animating over half the leaders in the game. He brought an incredible amount of life and character to them, elevating the AI leaders from mere heads to actual personalities. Ryan Murray built several of our units before progressing to creating leader-heads. His Tokugawa measures you with a particularly arresting gaze. Mark Shahan helped develop the leader-head modeling pipeline, creating efficient models that looked much more polygonally intense than they actually were. He also worked with Bart Muzzin to develop a normal-map shader and skin shader, extra touches that make the difference between the appearance of a well-made model and a real-life historical figure. Megan Quinn constructed many a city building and defined the elegant, ornamental look of the religious buildings. Alex Kim made some beautiful animal models early on and progressed to doing some excellent animation as well. His scruffy-necked wolf is a delight to look at. Nick Rusko-Berger painstakingly researched and built all the Wonders, Shrines, and Cathedrals, and helped us optimise all the buildings. Marc Hudgins created the concept sketches for all the leaders and most of the units in the game, eventually animating some of the latter as well. He also helped design the look and feel for half of the victory movies. Dennis Moellers designed the other half and also worked with Ed Lynch on the rest of the leader animations, extending their emotional range to match the AI personalities. Greg Foertsch tremendously improved the terrain, trees, icebergs and mountains, working with Tom Whittaker to come up with a terrain system that allows this tile-based, dynamic game to look completely organic. Brian Busatti, our unit lead, did an incredible job turning the units from bloated, generic blurs into efficient, crisp, clean fighting machines (or in some cases, settling, evangelizing, labouring, or exploring machines…). Mike Bazzell contributed some stunning sea units (what else would you expect from the man who brought you such breathtaking ships in Pirates!) Also, the special effects you see in the game are all his, lending sparkle, fire, smoke, and even nuclear blasts to the game. Interns Darren Gorthey, Chris Sulzbach and Kevin Bradley also lent capable and much-needed hands. Darren helped out with various interface elements, Chris helped out with units and damage states, and Kevin created some fantastic unit animations. Last but not least, art director Mike Gibson kept the art team rolling smoothly, always with an eye towards the Big Picture, always with an eye

towards Firaxis Quality. He believed the look and feel of *Civilization* is easy to grasp: it's Sid's World.

Ed Piper worked as our mod designer, building the excellent Crusades and Alexander the Great scenarios. He also worked on the Tutorial, which is a great starting point for old and new alike.

With every version of *Civilization*, we have made a point to thank the fans who make all of this possible by supporting the game for so many years. This time, however, we mean it quite literally. *Civ IV* was built hand-in-hand with the fan community. Early on in the project, we assembled a crack team of the best *Civ* players in the world, looking for equal representation from the worlds of single-player, multi-player, and modding. The backbone of this team of volunteers came from the two big-tent *Civ* fan-sites, Apolyton (www.apolyton.net) and CivFanatics (www.civfanatics.com).

Led by our three session leads, Sirian (single-player), Friedrich Psitalon (multi-player), and Isak (modding), our group grew slowly from 10 to 20 to 50 and more. Game design cannot happen in a vacuum, and the input from the forums made *Civ IV* a fundamentally better game than we possibly could have made on our own. Indeed, a few of the testers "crossed over" to the development team – Alex Mantzaris and Jon Shafer are both better known as Alexman and Trip, respectively – and made huge contributions. Bob Thomas (Sirian) redesigned our map script system while creating many new favourites for the rotation, such as Great Plains and Oasis. Michael Soracoe (Sulla) became a valuable member of our on-site testing team, lending a hand also with the manual and in-game help text.

The modding group kept us honest by offering to build some scenarios for the actual release. Rhye, Locutus, and Dale joined Isak to stress our system so that we were certain that we had built the foundation for a thriving mod community. The efforts and contributions of our small group was inspiring, and I hate to single anyone out for fear of who I might neglect to mention, but I can't finish without thanking Aeson, Rob,Vondrack, notyoueither, ColdFever, Solver, and Dominae for their efforts. They were but a few of a larger group of dedicated volunteers who put up with terrible crash bugs, gaps in communications, system incompatibilities, invisible terrain, and worse; simply because they loved the game. Your work can never be properly rewarded, but you have my sincere thanks. I know the difference that you made.

Finally, I have to give my personal thanks to the two people who made this whole endeavour possible, who entrusted me with the keys to the family car, so to speak. They gave our team the room we needed to make our mistakes, hit some dead-ends, and come out the other end with a game that we can't wait to get into the hands of our fans.

Thanks, Jeff and Sid. I hope *Civ IV* will inspire another ten-year-old out there somewhere who likes to dream big. Real big.

Soren Johnson

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