The "Logistics" branch of
the "Basic, Partial, Incomplete, Inaccurate" Rules of

EMPIRE

an Economic & Military
Strategy Game

rules recorded & developed
by Andrew Nisbet &
the Reed College Empire Association

Version 4.0 alpha 1
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1 GENERAL

1.1 Background

For much more information on Empire, and related material, go to *http://empire-game.org*.

1.1.1 History

Empire has a long history. An ancestor "Empire" game in 1938 was created by a group of buddies who had gone to college together at the University of California at Berkeley, who formed a sort of study group in the Bay Area several years later. The group included Stillman Drake (graduated Berkeley in 1932), Mark Wrede Eudey, Dan Belmont and Henry "Bip" Ralston. Drake's 1960 summary of the game rules still exists.

Empire was revived and metamorphosed at Reed College in Portland, Oregon in the fall of 1960, primarily by Stillman Drake's son Dan Drake (graduated 1964), JD Eveland, Jim Trosper and Alan Arey. They had input and playtesting from many including Jim Kahan ('64), Ron Hanks ('64), T. Nicolaus "Nick" Tideman ('64), Tony Wannier ('66?), Peter Clark ('67), Lynne O'Connor ('67), Emerson Mitchell, Heather Rohde, David Casseres ('65), Al Wood ('64, not the other Al Wood of two years later). Jay F. Rosenberg ('63) may have helped with some game concepts, although he never played.

Empire then underwent ongoing development at Reed through the 1960s and 1970s. *Andrew Nisbet* compiled written rules for the Reed game for the first time in 1969, continued active development of them into the late 1970s, and has been the primary keeper of Empire ever since.

Empire was little played after the mid-1980s, and perhaps not at all since 1991. Having encountered the rules (without encountering players or a board), I briefly revived the game in 1990-91 in Edmonton, Alberta, under the name "Logistics," for reasons explained below. After a major revision and dusting off effort in 2011, including the effects of rules petitions and marginalia never fully incorporated into the main rulebook, this "Logistics" branch developed into the edition you are now reading.

1.1.2 What's in a Name?

A mainframe (later Internet) computer game called Empire first emerged in 1971, inspired by what its designer Peter Langston had heard about the board game, which he says he had neither seen played nor seen the rules of. A much simpler, unrelated PC game, of an even more military nature, was released in 1983 for the PC and remained popular for some years.

When I first retyped and edited the Empire rules in the late 1980s, I decided to call my version of Empire "Logistics" to avoid confusion with these other games, mostly because the PC game was current and well known. These days those other games are no longer so well known, the Reed College board game had a prior claim anyway, and is the only board game of the bunch, and I now know a bunch of people with considerable attachment to the name. But as I need to identify my branch in some way, "Logistics" seems like a good label.

1.1.3 Licensing & Re-use

These rules are derived from those compiled by Andrew Nisbet for the Reed College Empire Association. He and they were kind enough to make a scanned version available under a Creative Commons Attribution NonCommercial ShareAlike (CC-BY-NC-SA) 3.0 license, which license these rules therefore share. I suggest that if you modify the rules, you maintain historical information where practical, and date and version your branch for clarity.

It is my intention to continue to update this version of the rules, and toward that goal I appreciate suggestions for clarifications, corrections and additions.

1.2   Overview

Empire "is a joint economic-political-military simulation involving various [types] of units representing military units, population units, and resource units which get moved and traded around. Resource units are extracted and converted in various ways into other kinds of units, including military units, which are then used for various purposes. War was engaged in, but seldom taken all that seriously, partly because the board was large and the number of units one could deploy was relatively small. So wars tended to be limited in scope, and aimed at specific targets, rather than general conquest." (J.D. Eveland)

The economic aspect of the game is unavoidable. There are many interlinked factors, and careful planning is required to avoid shortages of needed products. There is a chain of development, as you need resources and equipment to build certain products, which feed into other products, and so on down the line. You can exploit any of eight natural resources, provided you have the workers ("coolies") on location to do so. In the early stages of the game, your main limiting factor is construction machines, which you need to build roads (mostly early on), factories (mostly later on), etc. Soon you may find you don't have enough coolies, and you have to start worrying about your population. Soon you may have shortages of key resources or products, and troubles keeping your rate of economic growth steady. If you're not careful, your economy could go into a tailspin. Part of your problem will be getting your resources from their production sites to your factories. If you have the capability to move longer distances, you will find it mutually beneficial to trade with other players, because you will likely have different strengths in terms of resources and manufacturing.

It is worth noting that although you spend money, you don't have to worry about income. You're the government, so you can print as much money as you like. But if your spending exceeds your economic strength, your economy can collapse! This leaves you (temporarily, you hope) in bad shape, and everything you have subject to takeover. If you want to avoid this, you can be careful to spend money on things that benefit your economy, either immediately or in the long run. Your economic growth is measured in "Economic Development Units" or EDU. Maintaining a steady rate of economic growth is advisable. Alternatively, you can receive loans from other states.

1.2.1   Scale and Units

The scale for the game is abstract. The length of a turn and the size of a square are not usually defined. If a map of the real world were used for Empire, a square might be some 900 km across.

The game units are similarly abstract. A "coolie" (forgive the possibly racist term, which goes back many decades) is a generic unit of workers. A "truck" is probably a fleet of trucks, and a "cargo ship" might be one or a group of ships. Although military units are given specific designations which have size implications, such as "regiment" or "division," they too are functionally just abstract quantities.

1.2.2   Description of Play

This section is intended to give a *feeling* for the game. It is not intended to be precise, and some details may have changed since it was written.

No military units, other than everyone's single Small Arms Coolie, will show up until turn three or later, and even then, *slowly*. Before that, coolies will run around and stand on turf—first come, first served (or whatever, see the rules on Control).

Resources come out of the ground/ocean: $\triangle$ (wood), Fe (Iron), C (Coal), O (Oil), X (Chemicals), Cu (Copper), Rr (Rubber), Bx (Bauxite, unrefined Aluminum), and ⚡(Power). Most areas will be lacking one or more resources in the amounts players might hope for; trade is possible with an agreeable neighbor (as are war, piracy, blackmail, Danegeld, diplomacy, outright lying, etc.).

Various factories process resources into "stuff." Construction Machines (CMs) build other stuff—including factories, canals, roads, and some "scratch-built" mobile things such as cargo ships. Wood or Building Materials (derived from wood) are necessary resources for *all* factories, roads, etc. Browse through the glossary for examples of what kinds of factories produce different things.

An "average" capitol city might contain a Power Station (PS), a Construction Machine Factory (CMF), a Small Arms Works (SAW), a Steel Mill (StM), an Air Works (AW), a Warehouse, an Airport and a Naval Shipyard (NSY). Each of these takes up one of the nine spaces in the city, except the Naval Shipyard which takes two. Constructing all these things might occupy 6 Construction Machines, and would consume 7 Building Materials (BM), 2 Tool & Die (T&D), 4 Heavy Machinery (HM), and 1 Steel (St). Because the Construction Machines are busy building things in the city, they are tied up temporarily and unable to built other things. until the next turn. Only 3 BM and 1 T&D are left, but 2 △ can become one BM (or we could have built a Building Materials Factory. So you get the general idea. Of course, you won't know what you'll actually need until you have a real starting location on an Empire map.

The general idea behind the economic rules is that your country has a national budget (spending), consisting of cost (for building things and other actions that cost money) and investment (for resource production). Expenditures are rewarded with Economic Development Units (EDU). With a healthy balance in building (not too much military), and either a little luck or good planning, you build "Confidence" and keep a strong economy. You can even help less stable countries via loans ("Foreign Exchange"). Your overall economy is either okay or not, and there is no in between. Luckily this won't be a problem for a few turns, so you can relax and enjoy yourself.

So back to that first city you were building. The Power Station produces only five units of power, but that's perfect, as that allows you to run the CMF, SAW, StM, AW and NSY, which are all the ones that require power (no power needed for the Power Station, Warehouse, or Airport). Actually, the SAW and NSY won't even be running until turn 2 and turn 3 respectively, because they take longer to build.

So on the *first* turn we start building all those factories (complete most of them), and grab nearby resources with our coolies.

On the *second* turn, we have coolies on the resource squares and invest in them, so they are worked and resources appear there. We take those to the factories and run them: 1 Fe + 1 C > 1 St; 1 Rr + 1 Al + 1 O + 1 Cu > aircraft; 1 St (not the one we are currently building, that's not ready in time) > 1 CM. We also grab resource squares at what might be the limits of our controlled area. We finish the SAW. We use 2 CMs to complete the SAW and continue the NSY construction. The other 4 CMs can start on road, canals, a second city location, etc. (There is a 7th CM being built, but it isn't ready yet.)

On the *third* turn, we run the same factories, plus the SAW producing a "Small Arms" and combining that with a waiting coolie to create our second Small Arms Coolie (SAC), giving us two military units. The second SAC won't be able to move until turn four.

Meanwhile, a "coolie shuffle" brings raw resources in to the manufacturing centers, while sending coolies back from those factories to be on site to continue resource extraction next turn. If we have a Cargo Ship (CS), it could similarly shuffle resources. Roads and railroads can speed up these shuffles. New cities (either via "Colony Pieces" or scratch built) can give us more places to build things. By now, we know if we have enough of a given resource for the projected production.

But here the economic rules start to come into play and could land us in very hot water. For two turns we grew very quickly, but now we don't have anything new. A growth curve with rapid growth and sudden stagnation is risky; a bad Confidence roll could leave us in trouble. New resource squares only add EDU the first turn they are exploited. Maybe last turn we didn't really need to start exploiting those last three Chemical squares, six would have been plenty, nor the last five food squares…. By saving those for turn three, we could have a somewhat more gradual growth curve, and reduce the possibility of getting hosed by a single bad roll.

1.3   Game End

The end of the game may be after a pre-determined number of turns, the game may end by petition (see Petitions, section 2.4), or perhaps some players simply drop out and the game cannot be continued. As played in the 60s and 70s, determining a "winner" or "winning" was not considered the point of the game. Rather the entire experience of playing was the point, the journey rather than the destination.

1.3.1   Elimination

A player is considered eliminated if he has no population (coolies) left on the board. Note that land military units that can become normal coolies are counted as population for this purpose. Eliminated players are ranked in the order in which they were eliminated, with the first player eliminated being ranked last, etc. All resources and goods belonging to that player remain on the board and may be taken by other players. Self-mobile units belonging to an eliminated player are no longer moved by that player, and are subject to the capture rules (5.8.1).

1.4   Sequence of Play

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I.    Initial Economic Phase
         A. Investment
         B. Receive Resources & Food
         C. Coolies Reproduce (in cities)
         D. Feed Coolies
II.   Unit Actions (things that take Phases)
         A. Movement, Running Construction Machines, Trade
         B. Total Oil Spent for Moving Air, Navy & Army
III.  Combat
         A. Declare Combats (after all moves)
         B. Total Chemical Expenditures for Combat
         C. Combat Resolution
IV.   Construction in Factories
V.    Final Economic Phase
         A. Build things in Factories
         B. Calculate $ Spent & EDU Gained
         C. Calculate Popular Fund, Tax, etc.
         D. Pay all Military (even destroyed)
         E. Roll Confidence ("Rolling Out"), calculate new total
         F. Check for Depression
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1.5 Glossary of Terms

1.5.1 Abbreviations

△ : Wood.

$: Money, can be Cost or Expenditure (spending).

⚡ : (lightning bolt) see "Power Square."

AA: Anti-aircraft.

Al: Aluminum.

ALF: Aluminum Refinery.

AMF: Amusement Factory.

AW: Air Works, a factory for making aircraft.

B: Barge.

BB: Battleship.

BM: Building Materials.

BMF: Building Material Factory.

BTA: Basic Turn Allowance. (replaced by "Phases" in the Logistics branch)

Bx: Bauxite.

C: Coal.

CA: Cruiser.

CAP: Combat Air Patrol.

CGF: Consumer Goods Factory.

CMF: Construction Machine Factory.

CM: Construction Machine.

CRT: Combat Results Table. There are separate CRTs for land combat, naval combat, bombing, fighters vs. fighters and fighters vs. bombers.

CS: Cargo Ship.

CSY: Cargo Shipyard.

Cu: Copper.

CV: Aircraft Carrier.

D: Destroyer.

Dist: Distillery.

EDU: Economic Development Units.

ELF: Electronics Factory.

Fe: Iron.

FS: Fishing Ship.

HAW: Heavy Arms Works.

HM: Heavy Machinery.

HMF: Heavy Machinery Factory.

HTW: Heavy Transport Works.

Inv: Investment.

LMW: Light Metal Works.

LTW: Light Transport Works.

LXF: Luxury Factory.

MCR: Modified Confidence Roll.

NG: Naval Gun.

NSY: Naval Shipyard.

O: Oil

PS: Power Station.

Rr: Rubber.

RF: Rubber Factory.

SAC: Small Arms Coolie.

SAU: Small Arms Unit.

SAW: Small Arms Works.

St: Steel.

StM: Steel Mill.

T&D: Tool & Die.

T&DW: Tool & Die Works.

T&S: Transport and Supply.

TAC: Tactical Aircraft.

Triangle Symbol (∆): Wood.

UB: Submarine.

Wpx: Wood Products.

X: Chemicals.

ZoC: Zone of Control.

1.5.2   Definitions

Air Works (AW): A factory for making aircraft. Aircraft require Al, Cu and Rr to build; military aircraft also require O.

Aircraft Carrier (CV): May carry up to six fighters or four TAC.

Aluminum (Al): Refined from Bauxite. Used in all aircraft, also used to make pipelines and drop tanks. In Empire, Aluminum actually represents a variety of strategic metals, including titanium, chromium, etc.

Aluminum Refinery (ALF): A factory which may produce up to five Aluminum per turn from Bauxite, but needs one power per unit produced.

Amusement Factory (AMF): Produces assorted Whoopies.

Anti-aircraft (AA): Built in a Heavy Arms Works. Must be installed and manned by a coolie to work.

Balkanization: Splitting one country into smaller countries.

Barge (B): The naval equivalent of Rolling Stock. Can't move on its own, but can be towed by a Cargo Ship and can carry stuff. One cargo ship can tow four barges, each can carry four objects.

Battleship (BB): The largest naval combat unit, with a naval combat factor of three.

Bauxite (Bx): The raw ore Aluminum is refined from. (Also represents raw ore for other strategic and high-tech metals.)

Building Material Factory (BMF): May create 2 Building Materials for each 3△ (Wood) processed.

Building Materials (BM): Two BM are processed from three Wood (△) in a Building Material Factory. Two △ may be substituted for one BM at any time. See Wood for usage of both △ and BM.

Building: See construction.

C-5A Galaxy: A special type of transport plane, carries five objects.

Cargo Ship (CS): Used for transporting people and equipment.

Cargo Shipyard (CSY): Used for building non-combat naval vessels, such as Cargo Ships, Fishing Ships, and Oil Tankers.

Chemicals (X): Needed for many things, including construction of any military unit, and to make land attacks.

Coal (C): Burned for power or combined with Iron to make Steel, also used in making non-combat naval vessels.

Coastal space: A land space which (i) contains some sea; or (ii) contains no sea, but is directly adjacent to an all-sea space.

Combat Air Patrol (CAP): Assignation of aircraft to defend a particular space until one's next turn

Confidence: A measurement of economic strength. Too low a Confidence in comparison to Popular Fund can cause Depression. See 5.7.1 and 5.8.

Construction Machine (CM): Operated by coolies to build things, including factories, roads, bridges, etc. Not expended by use.

Construction Machine Factory (CMF): Makes Construction Machines.

Construction: The act of building something. All construction takes place either in factories or with a Construction Machine, both of which must be run by coolies.

Consumer Goods: A type of Whoopie.

Consumer Goods Factory (CGF): Makes Consumer Goods.

Coolie (K): A population unit, coming in four main flavors (regular, government, military and ambassador). Regular coolies are needed to operate construction machines and factories, and to exploit resources. Coolies are also needed to create land military units. However, specialized coolies can't do the functions of regular coolies.

Combat Helicopters: Like TAC, they can do both fighter and bomber duty, but not as well as regular fighters or bombers. They have a shorter range, but do not need an airfield to land.

Copper (Cu): Used in building aircraft, power stations, power lines, distilleries, and submarines.

Cost: Money spent building things, or in trade or loan. A different kind of expenditure from Investment, but both spend $.

Cruiser (CA): A middle-weight naval combat ship, with a naval combat factor of one.

Depression: An economic collapse. When in depression, only half your resource sites may produce, and your units are subject to capture when presented with a superior military force. Occurs when your Investment plus Popular Fund exceeds twice your Confidence.

Destroyer (D): A light-weight naval combat ship, with a naval combat factor of 1/2.

Distillery (Dist.): Comes in two non-interchangeable types. One purifies sea water, and the other makes booze.

Drop Tank: An external fuel tank for military aircraft which doubles the flight range of the aircraft (not reusable).

Economic Development Units (EDU): These are gained from initial investment, and various sorts of production (especially Whoopies), and are necessary to avoid depression. See 5.7.0.

Electronics Factory (ELF): A factory used for making electronic Whoopies.

Expenditure: See $.

Factory: Built by a Construction Machine (CM), can be used to build things without further use of construction machines. Factories require one unit of power each to operate (except ALF and PS). Besides things with

"factory" or "works" in the name, <u>Cargo & Naval Shipyards</u>, <u>Steel Mills</u>, <u>Aluminum Refineries</u> and <u>Power Stations</u> are all factories.

Fishing Ship (FS): Harvests food from fish squares

Flanking: The elimination of terrain bonus for defense because not all the attackers are affected (e.g.: some attackers are in a river square, but some aren't).

Flight Range: The distance an aircraft can fly without stopping to refuel.

Heavy Arms Works (HAW): makes Heavy Arms Units, Naval Guns, etc. Indirectly required for creating all heavy land military units.

Heavy Machinery (HM): An intermediate product used up in building certain types of <u>factories</u>.

Heavy Machinery Factory (HMF): Makes <u>Heavy Machinery</u>.

Heavy Transport Works (HTW): Builds locomotives, <u>rolling stock</u>, and tanks.

Installation: The act of setting up a <u>Naval Gun</u>, <u>Anti-Aircraft</u>, etc. Installing something is a form of <u>construction</u>, done by a <u>Construction Machine</u> and a <u>coolie</u>.

Investment (Inv): Money spent on producing resource and food squares. A different expenditure than <u>Cost</u>, but both spend $.

Iron (Fe): Combines with <u>Coal</u> to make <u>Steel</u>, and is used by itself in building some items. Needed directly or indirectly in building all ships. May be used instead of <u>Building Materials</u> or <u>Wood</u> in building a bridge.

K: <u>Coolie</u>.

Light Metal Works (LMW): Used to build certain <u>Whoopies</u>.

Light Transport Works (LTW): Needed to build trucks, tracked transports, T&S, etc. Indirectly required to create all regular army units.

Luxury Factory (LXF): Used to make certain <u>Whoopies</u>.

Naval Gun (NG): Built in a <u>Heavy Arms Works</u>, mounted on land to fire at ships. Must be <u>installed</u> and manned by a <u>coolie</u> to work.

Naval Shipyard: Can build both regular and military ships, but is itself more work to build than a <u>Cargo Shipyard</u>. Generally, non-military ships require Fe, C and X to build, while military ships require St, O and X.

Oil: Needed to move regular army units, naval military, and all aircraft. Can also be turned into <u>rubber</u> or burned for <u>power</u>. Also needed to build all naval military and air military units, and indirectly for all regular army units.

Phases: Each turn is divided into 72 phases, so a phase is essentially a measure of time. Doing things (moving, etc.) during a turn takes certain numbers of phases to accomplish.

PF: Popular Fund.

Political Centralization (PC): (Optional) A measure of the degree to which a country's executive controls the government's actions without concern for public opinion or interference from other branches of government. It is on a scale of zero to ten with an average of five. The exact value is chosen by the player. It primarily affects the player's ability to initiate or stop military actions, alliances, and trade embargoes.

Pop: Population, the total number of all types of <u>coolies</u> under a government's control.

Popular Fund (PF): A measure of the economic expectations of the populace. Formula is (previous PF)+($)-(previous Tax). <u>Taxes</u> are 1/4 PF. Too high a PF relative to <u>Confidence</u> can cause <u>Depression</u>. See 5.7 and 5.8.

Power: Needed to run <u>factories</u>. Each factory uses one unit of power, except <u>Aluminum Refineries</u>, which use one per <u>Aluminum</u> refined.

Power Square (⚡): A space with potential hydroelectric power. A Power Station built in a power square doesn't need to burn Coal or Oil.

Power Station (PS): A type of factory. One power station generates five power. If not located in a power square, must burn one Coal or one Oil to run.

Random Events (Optional): Fluctuations due to outside political, economic, or physical factors. Checked for once per turn. See 10.1.

Range: The distance an aircraft can go without being refueled at a friendly airfield.

Regular Army: All land military units *except* Small Arms Coolies are "regular army." The most important thing about this is that non-military coolies die when in the Zone of Control of a hostile regular army coolie; they don't die in the ZOC of a Small Arms Coolie, unless unable to get away.

Rolling Stock: Railway freight cars, only useful on a railway, and requiring a locomotive to move. One locomotive can pull four rolling stock.

Rubber (Rr): Used to build all aircraft, underwater powerlines and underwater pipelines. Also required to build some vehicles, and indirectly for all regular army units. May be either natural, or converted from oil in a Rubber Factory.

Rubber Factory (RF): A factory which makes artificial Rubber by converting two Oil to one Rubber.

Scrambling: Fighters and TAC may intercept enemy attacks even when it is not the owning player's turn. Some types of scrambling are semi-automatic, others require orders.

Small Arms Coolie (SAC): Formed by 1 coolie + 1 Small Arms Unit. SACs are like militia, and are not regular army.

Small Arms Unit (SAU): Represents light weapons. Needed directly or indirectly to build all land military units.

Small Arms Works (SAW): Builds Small Arms Units.

Stacking Limits: There are stacking limits for movable objects (5 per square - see 6.2.1), and for military units (3 per square - see 8.2.2). Things being carried, or in warehouses, have no stacking limits.

Steel (St): Made in a Steel Mill from Iron and Coal. Used in building a wide variety of things, notably naval military units, tanks, Small Arms Units and Heavy Arms Units. Required indirectly to build all land military units.

Steel Mill (StM): May produce up to five steel per turn from combining Iron and Coal, or melting down Construction Machines (see 9.1, 9.3).

Submarine (UB): A special combat ship which uses different rules. Fragile in defense, but uses a special torpedo attack. When submerged, may be attacked only by Destroyers or Cruisers. See also 8.3.6.

Tactical Aircraft (TAC): Fighter-bombers which can serve both functions, but not quite as well as the more specialized fighters and bombers.

Tax: A factor which slows the growth of the Popular Fund (PF). The current tax is equal to 1/4 the current PF.

Technology (optional): A means of increasing the effectiveness of specific types of combat units. Fully implemented, it will have a wider range of effects. See 10.2.

Tool & Die (T&D): A product made from Steel which is needed to build many types of factories, notably Air Works and Light and Heavy Transport Works.

Tool & Die Works (T&DW): A factory for making Tool & Die units.

Transport and Supply (T&S): A material unit needed directly or indirectly to build all regular army units. Moving such units consumes extra oil (see 3.1.12).

Whoopies: Things built in factories which have no real purpose other than generating Economic Development Units and thus helping avoid depression. See also 9.4.

Wolf Pack: A group of <u>submarines</u> combining torpedo attacks for better odds (see 8.3.6).

Wood Products (Wpx): A form of processed <u>Wood</u> used as a <u>Whoopie</u>, or in making other whoopies (see 9.4).

Wood (△): Three wood may be processed in a <u>Building Material Factory</u> (BMF) to make two <u>Building Materials</u> (BM). Two wood may be substituted for one BM at any time. Wood and BM are needed to build all <u>factories</u>, cities, docks, airfields, canals, etc. Either wood or <u>iron</u> may be used to build a bridge. See also 9.1-9.4.

Zone of Control (ZoC or ZOC): A hypothetical field extending from a military unit (land or naval) into its own square and into adjacent squares into which it could move. Non-military units do not have these. Naval military ZoCs only affect naval units, and land military ZoCs only affect land units. Being in a ZoC can induce combat, restrict or stop movement, and even kill enemy <u>coolies</u>. See also 8.2.1.

1.6   Changes Relative to the 1976 Rules

1.6.1   Substantive

Pretty much all of section 1 is new material, including the historical information, glossary, and sequence of play. The description of play was taken from hand-written notes on an unused and unfinished attempt at rewriting the rules. Section 5.2 (Spending Money) has some changes, as it is now possible to exchange money as well as goods. Production (5.3) has been altered slightly: construction with CM occurs during the turn, and factory production at the end of the turn. Section 5.5.0 changes the road/rail bonus for cities: it now only applies between adjacent cities.

Section 6.0, the general movement rules, has some of the biggest and most pervasive changes. One is the division of a turn into 72 phases for movement purposes. This avoids the fractions of the 12 BTA approach while usually maintaining the exact same effects.

More important is the elimination of sub-squares (except for city sub-spaces). **Because the elimination of sub-squares causes this edition of the rules to be incompatible with most pre-existing Empire maps, sub-squares are about to be re-introduced as an optional thread through the rules.** Eliminating sub-squares has several side effects, notably that mountains and rivers would be considered to affect the borders of spaces.

A coastal space is now defined as any space which is either (1) partly land and partly water, or (2) an all-land space adjacent to all-water space. The movement chart, 6.1.1, has been revised and expanded, with some changes to air movement (also in 6.1.2). 6.5.2 details the new rules for river movement, and the extra cost for crossing narrow rivers.

The combat results table, 8.2.5, has been changed. There are now defensive bonuses for units in forests (8.2.8). Combat helicopters have been added (8.6.9).

In the charts, 9.6 gives change in confidence based on EDU change, for those not inclined to work through the formula.

1.6.2   Unfinished / Untested Changes

The new optional rules for Random Events (10.1) are fully functional but insufficiently tested. Optional rules for Technology (10.2) have neither been playtested nor fully developed. Other optional rules mentioned in several places may not yet be fully worked out. Many of these relate to rules additions, which could be more easily added to a computerized version of the game, but would be unwieldy in a board game.

An additional record sheet, the Turn Action Sheet (3.2), is proposed but has not (yet) been created (11.2 is blank).

1.6.3   Minor & Cosmetic Changes

The rules have been significantly reorganized into what I imagined was a more coherent order, and rules are now numbered with a system similar to SPI's "case system." Almost every section of the rules has had some clarification, including those made by petition in 1990s play. Several abbreviations have been changed to be simpler and more consistent. The "sequence of play" (1.4) has been expanded. A glossary (1.5) has been created. Construction (5.3) has been clarified. Section 6, Movement, has seen some of the most extensive rewriting. The attempted addition of

(optional) technology required a revision of various combat charts, allowing the option of percentile rolls for attacks involving advanced technology. Sections 8 and 9.3 were revised to eliminate fractional units of arms and tanks. The bombing rules were clarified.

Subsection 10.3 adds winning, losing and victory points, allowing the players to keep track of ongoing "batting averages" for long-term ranking purposes, for those who care about such things.

2 PROCEDURAL RULES

2.1 Head of the Empire Association

The Head of the Empire Association is responsible for maintaining the rules, starting the game, and storing the equipment while no game is in session. He validates rules change and clarification petitions. He is responsible for the archives. He has the right to change the rules by *fiat* when the game is not in session, but must announce any changes before the beginning of the next game. These changes may be rejected by a (simple) majority vote prior to the start of the game.

2.2 Starting the Game

2.2.0 General

On a typical map, the game may be played by five to twelve players, with seven to ten being optimal. Order of play is determined randomly. Each player draws one card from a normal deck of fifty-two cards. Cards are valued in "bridge order" (Ace high, and in event of a tie, suits are ranked spades, hearts, diamonds, clubs). The player drawing the highest card places his capitol first, and all other players place their capitols in the order of their drawn cards, the lowest placing last. No capitol may be placed within one turn's Coolie movement of any other capital. After all capitols are placed, the players again draw, this time for turn order, in the same manner as the placement ordering.

These actions constitute "Turn 0."

2.2.1 Starting Resources

Placed capitals contain the following "Starting Resources":

```
10 Wood (△)
10 Building Materials (BM)
 5 Copper (Cu)
 0 Bauxite (Bx)
 5 Aluminum (Al)
 5 Rubber (Rr)
 5 Oil (O)
 5 Chemicals (X)
 5 Iron (Fe)
 5 Coal (C)
 5 Steel (St)
 6 Construction Machines (CM)
 4 Heavy Machines (HM)
 3 Tool and Die (T&D)
10 Food
10 Confidence (economic, not physical,
resource)
30 Coolies (population)
1  Government Coolie
1  Small Arms Coolie (SAC)
4 Colony Pieces
```

2.2.2   Free Gifts

Additionally, each player will receive, at the beginning of his Turn 2, his choice of any two (2) of the following "Free Gifts," as additional starting resources.

```
One Cargo Ship
One Cargo Plane
One Truck
One Locomotive
Two Rolling Stock
Three Oil Tankers
Six Squares of Road
Six Squares of Railroad
Six Squares of Powerline
Six Squares of Pipeline
One Square of Canal
```

A player may take the same option twice (for example, to get 12 squares of road, or two cargo ships).

The second turn gifts must appear as follows: any movable or self-mobile object (boats, trucks, etc.) must appear in the placed capital. Immobile items (roads, powerlines, etc.) must be placed along the path *traveled* by one or more of the country's coolies on turn one. Items taken must be listed on the Turn 2 turn sheet.

2.3   The Twenty-Four Hour Rule

As described in the Economic Rules (5.7 & 5.8), the Roll of Confidence (with two regular, six-sided dice) ends a player's turn, and is termed "rolling out." Such rolls must be witnessed by at least one other player, and must be recorded on the Move Order Sheet as to time and date. No player may legally move out of turn; the only way to move simultaneously with another player is to give control of one's country to that player.

Each player is allowed a 24-hour period, from the time that the immediately preceding player rolls out, during which he must make his move and end by rolling out. If a player has not rolled out by the end of this period, confidence may be rolled for that player by any other player (or God), without any further opportunity for the "rolled out" player (and his countries) to make any moves. Any moves already written for that turn (as well as implications of those moves) will stand, and no changes in these moves may be made (see "interpretations," however). Military attacks may not be implied, save by the rolling of those military attacks.

If the player has *no* written moves whatsoever, food production will be assumed to occur at all manned farm and fish sites, and coolies will be assumed to be fed to whatever extent is possible. In this situation, whomever "rolls out" for the offending player is responsible for completing the player's records, determining if coolies die, planes crash, etc., and recording such events. It is customary, although not required, for such determinations to be witnessed by another player.

In the even that a player is rolled out by someone else, the following moves are "implied" and assumed to happen automatically even in the absence of written orders, if the player did not complete their turn themselves: production of food and resources at all manned squares, reproduction of coolies where possible, continuation/completion of multi-turn work started on previous turns, and cost and EDU generation for all such work.

If a player is rolled out by another, a signed note must be left for the rolled-out player on their country's turn sheet for the relevant turn. If the player has not yet started a turn sheet, the player rolling out must start one for them.

Whenever a player rolls out or is rolled out in violation of the 24-hour rule, that player shall have Modified Confidence Rolls (MCRs) determined as follows: For each full 24-hour period between the beginning and the end of the player's turn, the roll of confidence shall be reduced by 1 to provide the MCR, to a minimum MCR of 2. When a balkanized player controlling multiple countries is affected by an MCR, all of his countries will have the same penalty. When a player has an MCR, the change in confidence will be calculated using the MCR in place of the actual die roll.

The confidence roll and MCR will both be entered under "roll" on the economic record, separated by an arrow (->). Thus, if a country has a roll of 7 and an MCR of 6, the entry shall be: "7->6". (If only one number is entered on the economic record under "roll," players may assume that number to be the actual roll and not the MCR.

The 24-hour rule may be suspended for a specific length of time by a simple majority vote. This is termed a "Suspension Petition" (see Petitions, below). Such petitions may not be retroactive.

2.3.1   Late Penalties

If a player takes more than his allotted twenty-four hours to roll out (and the twenty-four hour rule is in effect), then his roll is adjusted as follows: for every period of twenty-four hours, or portion thereof, in excess of the initial period, one (1) will be subtracted from the actual roll, the result being the "roll" used to compute the confidence. This modified roll is entered in the records in the format "(actual roll) arrow (modified roll)" (AR -> MR). Further, the lowest possible modified roll is two (2), and any modified roll which is less than two shall be entered as two.

2.4   Petitions

Petitions must show the date and time posted in the upper right hand corner. Rules Change Petitions are used to modify, change, or create rules. While the Game is in session, a Rules Change Petition requires a unanimous vote (no votes against) in order to pass. Rules Clarification Petitions are used to clarify ambiguities, and implications of

existing rules, and are passed by a simple majority (more for than against). Suspension Petitions are used to suspend the 24-hour rule for a specified length of time, and are also passed by a simple majority. Game End Petitions are used to end the game at the end of a specific turn, and must be passed by all but one of the players. No petitions are effective retroactively.

Only Bona Fide players may vote on petitions. Bona Fide players are those who are still in the game, and either own a country that started the game, or have owned a country for a full turn. Votes may be for, against, or Quorum.

If it is uncertain as to whether an issue is itself a Clarification or a Change, then this decision is itself a Clarification. However, it is permissible to have the question as to the nature of the petition be part of the same petition making the clarification/change.

In any case where the written rules (i.e. this document) and either their intention (i.e. the *clear* spirit of the rules) or the unwritten rules (i.e. those that exist by tacit consensus among the players) stand in conflict, there exists an ambiguity which may be interpreted, and must be clarified by a Rules Clarification Petition.

Players are encouraged to invent and to allow unusual, new and creative ideas to work. Empire has a history of innovation, and one of the guiding principles should be what whether the proposed new rule will make for good stories that make sense.

2.5   The Board

A standard Board is 42 inches by 72 inches. It is ruled in one-inch squares which, by being half-displaced from column to column, are hexagonal in character. (If desired, to achieve a more correct hexagonal aspect ratio, the squares may instead be slightly rectangular and more tall than wide, such as 1 inch tall and .866 inches wide, or 1.155 inches tall and 1 inch wide.) Spaces on the board must be numbered in some consistent system so that they may be easily referred to in player records. Cardinal directions on the map exist for all six directions, and should be labeled clockwise from top N, E, Q, S, W, P (that is, the four usual compass directions plus P and Q).

A standard map is functionally cylindrical, and "wraps" on the two short ends, such that going off one side means re-entering the opposite side. Many other maps are possible, including non-wrapping maps, or even flattened icosahedral maps, yielding a passable imitation of a sphere. Any special map properties must be announced prior to the start of the game.

Terrain features: A given square is either land or sea, or potentially both (coastal). Land is distinguished by its wide variety of additional terrain features and possible resources, while a sea square may contain oil, fish, or coral reefs. Mountains and coral reefs are black peaks grouped together (reefs are sometimes also represented by a chain of connected "x"'s), and cover only the area on which they are drawn. Mountains and reefs can block passage through certain sides of a square, or the entire square. A coastal square is one which (i) contains both land and sea, or (ii) is an all-land square adjacent to an all-sea square.

Shading may be used to distinguish terrain. Mountains are grey, forests green, desert golden yellow, rivers and water blue. Red is used to outline spaces containing resources. Double resources are underlined, and triple resources are circled.

To aid in record-keeping, the board may be covered with a clear plastic surface, which may be marked on with overhead projector markers. This allows objects to be marked upon the map as they are built, including roads, railroads, canals, etc.

The Steve Smith Mountain Dock Rule: In any case where a player is in doubt as to a terrain feature, he must bring said feature to the attention of all players of the game, who will as a group determine the nature of said feature. In all cases of map manipulations without such prior determination, the map interpretation shall be against the manipulating player.

Determination of disputed features is treated like a Rules Clarification. It is the responsibility of a player to examine his own territory, and bring all possible disputes to the attention of the other players as quickly as possible.

3 RECORDS

3.0 General

Empire is an open information game. Each player must have publicly accessible records which show everything that player has produced, and everything under that player's control. Utilizing a player's records and the board, any other player must be capable of determining the positions of everything under the first player's control, as well as the production of said player's countries. Various records can reflect changes in status during a turn, as well as end-of-turn or beginning-of-turn status. The writing of military locations in black on black lines of the map, or other confusing strategies, with reference in records only to marked map locations, constitutes deception, and is a violation of open information. Any move incorporating such tactics is illegal.

Notwithstanding the above, players are permitted to communicate and plot secretly, and some system for exchanging confidential messages may be devised, or email may be used. If such a system exists, players are not allowed to "read each other's mail" without permission.

3.0.1 Interpretation

Anything, the position of which is listed neither in a player's records nor on the map, may be assumed (a) not to exist, or (b) not to have moved from its previous or inferred position, at the option of the interpreting player. (EXCEPTION: A government coolie is assumed to exist unless it is explicitly stated to have killed itself, or has been killed by hostile military, or by some other method by which coolies may be killed by opponents—e.g. by being put out of supply, etc.)

One's opponents may assume that one's position is the one most favorable to themselves in cases where one's records are ambiguous. In this context, ambiguity exists when records conflict with each other or the map. If something is not listed on the appropriate sheets, but is listed elsewhere, this constitutes a conflict. By rolling out for a turn, a player forfeits any further right to question and/or interpret the moves of an opponent made prior to that rolling out. Any questions, disputes, or interpretations must have been posted or resolved prior to rolling confidence. Interpretations may *only* be made during the interpreting player's turn. The act of interpreting an ambiguity resolves that ambiguity, thereby precluding any further interpretations (unless the interpretation itself is ambiguous or illegal).

All interpretations must be written. An interpretation must be ported (?) and must indicate the interpreting player, the player being interpreted, the interpreting player's turn and turn slot, and must be signed by the interpreting player.

Each country's records must include:

3.1 Economic/Military Record Sheet (Sheet 1)

Must have the following entries (see also 5.7):

1. Investment (inv): Indicates the total of resource/food investment points for that turn as indicated in the economic rules.

2. Expenditure ($, Cost): Indicates total for any turn of money spent, as explained on economic sheets and in economic rules.

3. Popular Fund (PF): A *cumulative* total, calculated as "PF = (previous PF)+(current $)-(previous Tax)"

4. Tax: 1/4 of current PF.

5. Confidence: Indicates level of confidence, calculated as per instructions in the economic rules. Confidence is cumulative.

6. Food Squares: Indicates the number of active food production sites at the beginning of a given turn. Same as the investment for food for that turn.

7. Coolies: Indicates the number of regular coolies under a country's control at the *end* of a given turn.

8. Other Population (Pop): Indicates the total number of military, government, and ambassador coolies under a country's control at the *end* of a given turn.

9. Military Units: Refers to the number of land, naval, and air units which are under a country's control at the *end* of a given turn, after all battles initiated during that player-turn have been resolved.

10. Navy at Sea: Refers variously to the number and type of military ships at sea at the *end* of a given player-turn, after battles have been resolved.

11. Oil Due:

For Flights: 0.02 Oil per flight, a flight being the movement of a military airplane during a turn (in the air), thus allowing intermediate stops without paying additional oil. Calculated only for a given turn, not cumulatively.

For Navy at Sea: 0.10 Oil per battleship or carrier per turn at sea, 0.05 Oil per cruiser per turn at sea, .025 per destroyer/sub at sea. Oil must be consumed for any military ship that is at sea at the end of a turn. Again, listed only as oil due in a given turn, not cumulatively.

For Transport & Supply Movement: 0.01 Oil per phase T&S, applying only to phases spent while the unit with T&S moves itself, not in arming, nor in unarmed transport, nor while being otherwise carried/transported (as in a cargo ship). Again, listed only as oil due in a given turn, not cumulatively.

Total Oil Due: Reflects *cumulative* total of oil consumed during a given turn, plus oil debts accumulated from the previous turn. Partial units of oil accumulated must exist at the time of their use — i.e. there must be a full unit of oil in a player's country to cover partial unit debts. As soon as a full unit of oil is accumulated, said unit of oil is consumed and deducted from that player's economic record.

12. Chemicals Due: Listed *cumulatively*, reflects chemical debt accrued through military attack by land or anti-air units, as indicated under military rules. Partial units of chemical are treated in a manner similar to partial units of oil, as described above.

13. Military Pay: Listed as military pay for current turn, plus accumulated debt from previous turn. All land military units must be paid $0.1 per turn. Units destroyed during a turn must be paid. Units disarmed during a turn need not be paid, if they do not subsequently rearm during that turn. NOTE: this applies only to units that disarm *completely*. Units acquired or lost by transfer of control during a turn must still be paid for that turn. Partial units of military pay are not calculated into the economic record for any purpose until they have accumulated a whole unit, at which time the paying player enters one $ *plus* one unit of food into his current turn for one full unit of military pay.

3.2   Turn Action Sheet (Sheet 2)

One turn sheet is filled out each turn. Each must include:

- The exact location and Investment for every food and resource square invested in during that turn, if said resources were exploited by fishing ships or oil tankers, and EDU for newly developed food and resources.
- All items built during that turn, with Cost and EDU (also listed must be any other uses which generate Cost and/or EDU).
- Total expenditure and EDU for the turn.
- The destruction of roads, rails, factories, airfields, warehouses, docks, resources, movable items, and self-mobile items.
- Balkanizations must also be shown here.

3.3   Had-Used-Produced Sheet (Sheet 3)

This is a running record which must include all resources, steel, aluminum, CM, HM, BM, T&D and food. "Had" means the quantity on hand at the very beginning of the turn, prior to production. "Traded" are those items which were given to or taken by other players. "Produced" is the quantity gained from investment at the beginning of the turn, or (for processed materials) produced in factories at the end of the turn. "Used" are those items which are used in construction or production, or destroyed. Processed materials (Steel, BM, Aluminum, HM, T&D, etc.) cannot be used in the same turn they are produced, as they do not exist in time to be expended.

3.4   Trade Sheet (Sheet 4)

Must include all direct and indirect transfers of control of items/objects and money. Transfers of non-self-mobile units must go on the trade sheet only when actual physical transfer of control occurs. Trade sheets must also list any resources which are picked up, stolen, etc. In short, trade sheets must include all items acquired from other countries, and all items acquired or stolen by other players from your country. Trades must be recorded as to time within the turn at which said trade occurred, and the locations at which they occurred.

3.5   City Sheets (Sheet 5)

Must list all items in cities at the **end** of a turn, except those listed on military location sheets. Note that a ship or a plane in the same square as a city is not necessarily in that city, etc. Also lists all factories built in the city and the turn they were built, and any resources exploited in the city's square.

3.6   Military Location Sheet (Sheet 6)

Must give the location of all military units under the country's control, including land forces, naval vessels, and military aircraft; the location of all Small Arms Units (SAU), Heavy Arms Units (HAU), Transport & Supplies (T&S), Tanks and similar items which may be used to arm military; the locations of all bombs, torpedoes and the like; the location of all uninstalled Naval Guns (NG), Anti-Aircraft (AA); and the location of any ships or planes carrying any of the above.

3.7   Road/Rail/Pipeline/Power Line Location Sheet (7)

Gives the location of all roads, railways, pipelines and power lines (linear constructs). Each square of a linear construct must have specified which square it is coming from and which square it is going to. However, if a linear construct goes through a series of squares which are evenly lined up, it is possible to make one entry for that series of squares, so long as no misinterpretation is possible.

3.8   Items Not Listed Elsewhere Sheet (8)

Locates any items which have not been located in any of the other sheets. This is only for items truly not listed elsewhere; for example, oil tankers and fishing ships need only be listed when they are *not* developing resources.

4   COOLIES & GOVERNMENT

4.0   General

A coolie may carry two objects. A coolie counts as one object when carried by other self-mobile objects (military units count as 1 2/3 objects). Like other self-mobile objects, coolies may not carry objects while themselves being carried. Coolies need to be fed (see Supply).

Coolies can only do one thing (i.e. construction, destruction, etc.) during a turn, and one thing over the end of a turn (resource development, running a factory, etc.).

4.1   Cities and Reproductive Sites

All cities, colonies, and the capital are reproductive sites. If a reproductive site is occupied by one or more non-military coolies over the end of a turn, then—at the option of the owning player—one may be produced on that reproductive site, at the beginning of the next turn. The new coolie must be fed immediately, or it dies. The process of reproduction is voluntary, but occurs unless specifically ordered suppressed. Regular coolies are produced, even if ambassador or government coolies did the reproduction. If two hostile coolies occupy the same reproductive site, then either owning player may reproduce coolies (within the limits of the blitz rule).

Even if a city is destroyed, the square remains a reproductive site.

4.2   Government & Ambassador Coolies

The government coolie represents the government of a country. He may do no work, besides reproduction (government coolies reproduce regular coolies, not more government coolies). A country will continue to operate as long as the government coolie exists; if the government coolie is killed, the capture rules go into effect (see Depression & Capture Rules). They remain in effect for one full turn, after which a new government coolie is selected by the country's owner. No transfers of control, save those made under the capture rule, can take place while a country is without a government coolie. No country can have more than one government coolie at one time.

The above mentioned turn during which capture rules are active shall last from the player turn on which the government coolie was killed, to the end of that player's next player-turn.

A city occupied by a government coolie alone is an open city, as government coolies may not control airfields, docks, etc.

As long as he has a living government coolie, a player may declare any of his coolies a government coolie, and form an additional government under that coolie. Said new government shall control whatever the owning player chooses to transfer to it, within the limits of the rules. This new government coolie in effect constitutes a new country—see 4.3, Balkanization for details.

A player may declare any of his coolies to be an ambassador coolie in a manner similar to the naming of a new government coolie. An ambassador coolie has the same characteristics as a government coolie, except that no units may be placed under its control, it may not lead a new country, and the capture rules do not go into effect upon its death.

Government and ambassador coolies in the same square as a hostile coolie do not interfere with the other coolie's ability to do work; neither do they prevent hostile coolies from walking into the square occupied by the former. Government and ambassador coolies are appointed for life, and may not be demoted to regular coolies, except in death, where all coolies are equal in the eyes of the Great Ju-Ju.

4.3 Balkanization

Any player may divide his country into any number of sub-countries by declaring that he has done so on the turn sheet of the original country on the turn in which it is done, creating the necessary government coolies and records for each country. One may obtain no real benefit from balkanization, nor from the possession of balkanized countries.

A balkanized country is placed in the turn order immediately after the country from which it was balkanized. A balkanized country does not receive a separate 24-hour time slot, unless a player who is not currently running any other country runs it. A player must list *all* of his balkanized countries, plus his original and acquired countries, plus the order of their movement within his turn, on a separate sheet inside his records, called the Balkanization sheet. On the Balkanization sheet, next to the country's name, it must list the origin of the country (created, traded, starting country).

4.3.1 Splitting Possessions

When a player balkanizes, he may divide coolies and self-mobile objects among the newly-separated nations as he wishes. Non-self-mobile objects and immobile objects may be under the control of any of the balkanizing states which has a coolie present in the square, subject to the usual restrictions on control.

4.3.2 Splitting Economies

When a player balkanizes, he may divide the total confidence of the original state as he sees fit among the newly-balkanized states. For economic purposes, the balkanized state has the same proportion of the original state's previous tax, PF and EDU as its share of the original state's confidence.

5 ECONOMIC RULES

5.1 Investment, Resource Production, and Economic Development Units

Type of Square:	Invest	EDU
fish		1	3
farm (1 food to seed)		1	3
single resource	2	6
double resource	3	9
triple resource	4	12

Investment must be maintained every turn to produce anything. Economic Development Units (EDU) for development are accrued only by the first country investing in a square, and only on the *first turn* the square is invested in.

A square which is a single, double (underlined), or triple (circled) resource square is capable of producing 1, 2, or 3 resources per turn, respectively. For purposes of investment and resource production, a triple resource square may be treated as if it were a double or a single, and a double as if it were a single. When two or more resources are produced in the same square, these resources may be developed by a single coolie. Investment and EDU are taken as if the resources were in separate squares.

One farm or fish produces 5 food per turn when investment is maintained. Fishing ships may develop a fish square without a coolie.

An oil tanker may develop an offshore oil square without a coolie.

Other offshore resources (besides oil and fish) may be developed by coolies on cargo ships.

When any factory except a distillery is operated in the same square as a food square, the food square becomes polluted, and ceases to produce as of the following turn.

5.2　Spending Money (Cost/$)

Money is spent to build things (either in factories or with CM), to destroy things, and can be used in trade (whether given, exchanged, or loaned). Money is not an object, and cannot be captured or taken. Unlike most games, the player does not have a directly limited supply of money in Empire; instead, as much money as is needed may be spent, but beyond a certain point, further spending involves significant economic risks; see section 5.8, Depression.

Transferring money to another player does not require any contact on the board, and is unaffected by geography.

Money may be exchanged only during the turn of one of the main players involved. Money may be exchanged as part of a trade, given freely, or loaned. In the case of a loan, verbal or written agreements may be made, but players are not bound by the rules to honor such agreements, and may default on the loan. However, a player defaulting on a written loan loses 1/3 the sum of money from his Confidence after his next confidence roll, or 1/6 if the loaning player forgives the debt. Loans are usually made with interest somewhere between 1% and 20% per turn.

5.3　Construction

All items must be constructed by either construction machines or factories. In both cases, the materials needed to build the items must be moved to the appropriate square before building may take place; producing resources does not mean you have them available where you need them. All construction must be listed on the Turn Sheet, and whatever other sheets are appropriate (road/rail/power-/pipeline sheet, military location sheet, etc.). Construction with CM takes place during the turn, and factory production at the end of the turn.

5.3.1　Building with CM

Those things which are built by construction machines are considered to have been built during the turn, but appear at the end. The construction machine, a coolie to run it, and the necessary materials to build the item must be present on the square in which said item will be built, over the end of the turn on which construction takes place. Powerlines, roads, canals, and tunneling, however, follow a special rule: the CM, the coolie, and the material must have passed over the squares in which the item is being built. Linear things of this sort (except canals), normally go from the middle of one square to the middle of the next. Note that it is *not* possible to build only part of a section between two squares. For example, a road may not be built between two squares that have a river in between them and no bridge, since the road cannot cross the river.

At the end of the building player's turn, before rolling out, the materials used to build the item are removed—i.e., no longer listed on the had-used-produced sheet—and are replaced by the item itself on the record sheet. The construction machine is not consumed, but all other machinery is incorporated into the item.

All items take one turn to build except:

Factories:
- Naval Shipyard (NSY): 1 CM for 3 turns
- Small Arms Works (SAW): 1 CM for 2 turns
- Heavy Arms Works (HAW): 1 CM for 3 turns

Transport:
- Powerline or Pipeline: 1 CM per 6 squares for 1 turn on plain terrain, existing road or bridge.
- Powerline or Pipeline: 1 CM per 3 squares for 1 turn through forest or desert.
- Road or Railroad: 1 CM per 6 squares for 1 turn on plain terrain or existing road.
- Road or Railroad: 1 CM per 3 squares for 1 turn through forest or in desert.
- Mountain Road or Rail: 1 CM per square for 1 turn through a mountain border.
- Canal: 1 CM per border crossed for 1 turn on land; boundary crossed must border at least 1 square containing a natural body of water, to which the canal connects.

Bridge: 1 CM on a ship for 1 turn, crossing 1 river.

Underwater Power- or Pipeline: 1 CM on a ship per six squares for one turn, in a body of water.

Note on mountain roads/rails: It takes one full turn's move for a CM and materials to cross a mountain border during the construction of a mountain road or rail, unless there is a previous road/rail into the square.

In any case where an object may be produced by one construction machine and one coolie working for two turns, that object may instead be produced by two coolies and two construction machines working for one turn. Similarly, an object needing three turns of coolie/CM work may be built by 3 coolies and 3 CM working for one turn (or by 2 coolies and 2 CM working for one turn, plus 1 coolie and 1 CM for an additional turn).

In any case where a mountain road had been partially built and abandoned, the open information rule implies that a mountain road started from the opposite end of the mountain chain may intersect the first road at its deepest point of penetration. i.e., if construction of a mountain road is ceased half-way through a game turn (through death of the coolie, etc.), the mountain road is ½ completed. Any road started form the other side will, therefore, take only ½ a game turn to complete, and will, then, be completed and ready tor use half a game turn after the construction on the second road was begun.

5.3.2   Factory Production

A coolie may operate one factory at the end of the turn, requiring zero phases. A factory cannot operate without a coolie, and may only operate once per turn. In general, a factory produces one product per turn, with exceptions as noted on the economic production sheets. Building Material Factories can turn 3 Wood into 2 Building Materials (per turn). A rubber factory may turn four Oil into two Rubber. Steel Mills (StM) and Aluminum Refineries (ALF) may produce up to 5 units of steel or aluminum, respectively, per turn, in their cycle of operation.[1]

Shipyards and Power Stations are factories, too (but Power Stations do not consume power to operate). Anything with "works," or "distillery" in its name is also a factory.

A power station uses either one coal, one oil, or the output of one power square to produce five units of power per turn. Coal and oil may not be diffused for use in power stations, but must be moved there normally. Power produced by the power station may be used by any other factories in the same city, or connected to that power station by power lines. Other players on the same "power grid" (network of power lines) may use any left-over power on their turns. However, excess power dissipates prior to the producing player's next turn.

In general, *factories use one unit of power to operate for one turn*. Beer distilleries, Power Stations and Steel Mills are the only factories which require no power to operate. ALFs require one power for *each* Aluminum produced.

CMs, HMs and T&Ds may be reconverted to steel by processing through a StM in conjunction with 1 Fe and 1 C, or just with 1 C. The first process yields 2 St (one for the "melted" machine, and one for the Fe + C); the second process yields 1 St (the C is lost).

The cost ($) or EDU of anything produced over more than one turn may be taken on any turn in which production takes place, or may be divided among these turns in any manner. However, all materials used in multi-turn construction must be expended in the first turn of construction. If EDU is taken on other than the first turn, the source of the EDU must be noted on the Turn Sheet for the turn(s) the EDU is actually received on.

5.3.3   Whoopies

Whoopies are items with little practical use except generating EDU. Unlike all other goods, the EDU for whoopies is not taken when they are produced, but when they are consumed. In effect, it is storable EDU. Consumed whoopies may or may not still exist, at the owning player's option, but must be listed as consumed in the owning

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[1] Hence, while a CM may be converted into a steel when processed with a coal, and that steel may be processed into another CM, this could not happen all in one turn at a single Steel Mill, because that mill has already run. However, another four steel could have been produced during that same run.

country's records. Self-mobile whoopies are not self-mobile until their EDU has been consumed. In cases when a whoopie is an input to make something else, it can only be used as an input if its EDU has *not* yet been consumed.

5.4 Destruction & Scrapping

A coolie in a turn may destroy one factory, dock, warehouse, airfield, installation, or city. A city may not be destroyed until all factories, docks, airfields, warehouses, and installations in it have been scrapped or destroyed.

During a player's turn, movable objects may be destroyed as follows:

Chemicals, oil, bombs, and torpedoes may be burnt;

Consumer goods may be consumed;

Any other movable objects may be thrown into an ocean, lake or river.

SACs may destroy movable units as stated above, but may not destroy immobile items. Regular military units may do none of the above.

Coolies and population die on command, at any time (command being issued by the controlling player). Land military units doing so leave behind their weapons, unless they disarm and destroy the weapons as regular coolies.

Aircraft may crash at any time on command of the owning player. Aircraft in airfields and ships in docks may not destroy themselves; however, beached ships may scuttle. Aircraft can be carried by coolies and destroyed in natural bodies of water.

Scrapping a factory is done over the end of a turn by a coolie and a CM, for $1, yielding 1 EDU. At the beginning of the consecutive turn, one/half (or less, rounding down) of the *total* number of resources which went into the factory reappear on the site, and the factory ceases to exist. BM and construction materials (?) may not be recovered by scrapping, but may count as part or all of the one-half of the resources which are not recovered.

Constructed things other than factories may not be scrapped, and have no recoverable resources. Underwater pipe and powerlines may neither be destroyed nor scrapped.

5.5 Cities

5.5.0 General

Cities are useful in three ways. First, coolies can only reproduce in cities. Second, unlike normal squares, cities can hold multiple factories, docks, etc. Third, cities give both road and rail bonuses to units moving from adjacent cities, thus avoiding the need to build road and/or rail to connect adjacent cities.

A city is built on a land square, which may contain any other terrain. A city is made up of nine "minor squares." When a city is built, minor squares may be filled with simultaneously constructed factories, docks, warehouses, airfields, etc. Docks, airfields and naval shipyards occupy two minor squares each. Warehouses and all factories other than naval shipyards occupy one. Factories do not occupy any space until their construction is completed, so it is possible to scrap a factory and build another factory in the same spot, in the same turn. It is not possible to build a naval shipyard such that only one minor square of it is in a city. Resource squares being developed on a city site occupy one minor square; food squares (farm or fish) do not occupy any space in a city; neither do oases.

5.5.1 Colonies and the Capital

Colonies and the capital become cities at the instant that they are placed, and all benefits accruing to cities may be used on the turn in which they are planted. Colonies are "instant cities"; they may be placed at any point during the owning player's turn, including in the middle of his movement.

5.5.2 Airfields, Docks, and Warehouses

No more than 12 air units may take off or land in a given airfield in a given turn (scrambling is excepted from this limitation). A fighter, helicopter or Cargo plane is 1 unit. A Tactical Air Craft (TAC) is 1 1/2 units. Strategic

bombers and C-5As are 2 units each. Self-mobile air consumer goods are one unit each (e.g. passenger liners, balloons).

Dock capacity is 12 sea units. Cargo ships, cruisers, barges, oil tankers, and self-mobile consumer sea goods (sailboats, rubber life rafts, etc.) are 1 unit each. Fishing ships are 1/2 unit. Battleships and carriers are two units each. No more than 12 sea units may use a dock to load/unload in the same turn.

A warehouse holds an infinite number of items! Overstacked military units, airplanes which will not fit into airfields, and so forth, may be stored in a warehouse. Military so stored must still be paid, has no ZOC, zero defense factor, is bombed as warehouse contents, and is captured by any player seizing control of the warehouse.

5.6   Control

Objects may only be moved by the player who has control of them. A player may not move another player's objects; a trade (voluntary or involuntary) or capture must take place first.

No binding conditions may be placed on a transfer of control. Control may be transferred from one player to another of any self-mobile or movable object. To voluntarily transfer control, a player must make a written or a witnessed verbal statement surrendering control of the object; the player receiving the object must make a similar statement accepting control of the object.

In a case where two or more unfriendly coolies occupy the same square, neither coolie may militarily arm, and neither side controls any resources, factories, docks, etc. present in the square. However, if one side has a SAC in the same square, then that side may arm, run factories, docks, etc. See also "Zones of Control."

It is possible to seize control of any self-mobile object, except coolies and military units. Ships and barges may only be seized while they are beached or docked (EXCEPTION: see Pirate Ships). Airplanes may only be seized when not in the air.

Any coolie may seize control of any of the above in the same square as itself only if there are no hostile coolies in that square, and no hostile military Zones of Control (ZOC) in that square. A land military unit may seize control of any of the above in the same square as itself only if no hostile military zones of control extend into that square. It is not possible to seize objects which are in adjacent squares. A coolie in a cargo ship may seize control of the ship unless a hostile coolie or hostile military coolie is also aboard the ship. A military coolie in a cargo ship may also seize control of the ship unless there is a hostile military coolie aboard the ship. Control of a barge, sailboat, rubber life raft, yacht, or luxury liner may be seized by a cargo ship if said units are unoccupied and not being towed (as in the case of barges). If an SAC moves into the square where a Cargo Ship or Cargo Plane is being scratch built, the SAC may seize control of the ship or plane when it is completed.

Self-mobile objects may not move into or through a square in which they would be subject to seizure if they stopped. Thus, a self-mobile unit may only move through a square containing hostile coolies if itself accompanied by a coolie, or if it is in a friendly military ZOC.

When a player seizes control of any type of unit from another player, he must make a notation to that effect in the affected player's records, on the Trade Sheet, listed as to time (in turn order) seized. This is treated as a normal trade, except that the receiving player must list the traded item(s) in the records of the player from whom the item was taken.

5.7   Economic Record Sheet

5.7.0   General

The investment on a turn is that of *all* resource squares belonging to a player, which will produce at the beginning of the turn. This includes food.

Expenditure ($) for a turn is the same as the total cost for the turn. Costs are incurred for building things, scrapping factories, giving or loaning money to other countries, and arming military units.

Popular Fund equals (previous PF) + ($) - (previous Tax).

Tax equals 1/4 of the current PF, rounded down.

EDU represents the total Economic Development Units of all goods produced or consumed on that turn, and all *new* resources. New resources are those that are exploited for the first time in the game on that turn. If the resource was ever exploited before, in the same game, by any player, it is not new. EDU is *not* cumulative from turn to turn.

5.7.1 Confidence

For the use of confidence, see 5.8.0. Confidence may not be traded, nor may it go below zero. It starts the game at 10, and changes as follows:

$$\triangle CONF = (\triangle EDU/2) + \{ (R-7) [(|\triangle EDU|/20) +1] \}$$

NOTE: Here $\triangle$ (delta) means change, in the standard mathematical usage of the term. It does not refer to Wood resources. R = the Roll for "rolling out," appropriately adjusted for 24-hour rule violations. The vertical lines indicate that any negative sign on the number between them is ignored.

To speed play, a chart giving the resulting $\triangle CONF$ for various combinations of die roll and $\triangle EDU$ is given in the charts section at the end of the rulebook (9.6).

5.8 Depression

5.8.0 General

A country is in depression if: two times its Confidence is less than the sum of the Popular Fund and Investment. That is:

$$(2 \times Conf) < (PF + Inv)$$

When a country is in depression, only 1/2 of the active production sites controlled by the country may be operated on each turn. An active site is defined as a factory or one production point of resources (e.g.. a triple resource square equals three active sites). A player in depression may make no military moves, nor may he arm units. Finally, the capture rules (below) go into effect.

5.8.1 Capture Rules

While the capture rules are in effect, any piece belonging to the affected player transfers control to any player presenting said piece with superior military force, and choosing to exercise its ability to capture.

Superior military force is determined as follows: the military force of a land military unit is equal to its combat factor (attack factor applies to the would-be captor, defense factor to the unit in depression); military force of a naval unit is equal to its naval combat factor; except as noted below, units may only capture units which are in their zone of control.

Navy not at sea, air force not in the air, and land military units in cargo ships or C-5As have zero combat factor. Navy which is capable of bombarding land, or land military which is capable of bombarding navy may use this capability to exert the force of one or more bombs, as per military rules, for capturing purposes. Submerged submarines cannot be captured, except by units which could attack them.

Loaded bombers and TAC have military force equal to their bombing strength in support of land or naval attacks. I.e., bombers have a military force of one, and TAC have a military force of 1/2, unless used in conjunction with land military, where TAC has a military force of 1. Military force is rounded as bombing strength would be. Thus 3 TAC unsupported by land military would have a military force of 1, rounded down from the actual force of 1 1/2. Bombers and TAC attempting to capture units may not concentrate more than 3 military force in one square.

Land units defending against capture by land units (or land units supported by bombardment) receive the benefit of any applicable terrain defensive bonuses. Land units defending against capture by pure bombardment receive a doubling of their defense factor (ergo, a doubling of military force) from mountains or forest (not cumulative), but receive no river or landing bonuses.

No chemicals, bombs, or torpedoes need be consumed to capture units.

Since ships fight within squares, navy must be in the same square as a ship to capture it.

A self-mobile piece in the same square as a military unit (both belonging to a country against which the capture rules have been invoked) does not transfer control to a player confronting that square with military force if said force is insufficient to capture both.

6   MOVEMENT

6.0   General

All Empirical objects are divided into three categories: self-mobile, movable, and immobile. All self-mobile and movable objects may spend some or all of a turn's 72 phases in motion (moving or being moved). The number of phases required to move a space varies, depending on what is moving and over what medium it moves. Sometimes the rules refer to terrain "costing" so many phases to enter. The square being entered determines which terrain counts for movement purposes. In the case of mountains and water (rivers, canals, sea, etc.) the terrain on the border between the square being left and the square being entered is relevant. Moving along a road allows units to ignore other terrain penalties (except the doubling of movement costs due to desert). Military units (land, sea and air), require oil to operate—see 3.1.12.

6.1   Self-Mobile Objects

6.1.1 Movement & Carrying Capacity

Object	Capacity	Phases /border	Through terrain
auto, bicycle, motorbike	nothing	8	clear
		16	forest
		4	road or rail
coolie, SAC, infantry, airborne, construction brigade	2 objects / 1 object	12	clear
		6	road or rail
		9	forest
		36	swamp or ice
light transport	4 amb/govt coolies	8	clear
		16	forest
		4	road, rail or desert
locomotive	4 rolling stock (each carries 4)	4	rail only
truck	5 objects**	8	clear
		16	forest
		4	road or rail
		-	not in swamp
armor/mechanized	nothing	12	clear
		6	road, rail or desert
		-	not in forest except on road (nor swamp)
		25	ice
artillery	nothing	18	clear
		36	forest, desert
		9	road

		-	not in swamp
recon	nothing	8	clear
		16	forest
		4	road or rail
		-	not in swamp
battleship	1 coolie, SAC or regt.	6	sea, wide river, lake or canal
cargo ship	5 obj. & 4 barges (each barge carries 4)	6	sea, river, lake, canal
carrier	6 fighters/copters, or 4 loaded TAC & 4 light bombs	6	sea, wide river, lake, or canal
cruiser	nothing	5	sea, wide river, lake, or canal
destroyer	nothing	4	sea, wide river, lake, or canal
fishing ship	1 coolie & 5 food	6	sea, river, lake, canal
luxury liner	1 coolie	6	sea, river, lake, canal
oil tanker	3 units oil	6	sea, river, lake, canal
armor	5 objects	6	sea, river, lake, canal
rubber life raft	2 coolies	18	sea, river, lake, canal, swamp
sailboat	1 coolie	6 x wind	sea, river, lake, canal
submarine	3 torpedoes	6	sea, river, lake, canal
super-cargo ship (The Pirate)	infinite	5	sea, river, lake, canal
yacht	1 coolie	6	sea, river, lake, canal

Aircraft	Capacity	Phases /border	Flight range (all in air only)
cargo plane	1 object** & may tow 1 sailplane	3	40
C-5A Galaxy	4 objects* & may tow 1 sailplane	3	40
combat helicopter	1 light bomb	5	15
fighter	nothing	3	20
strategic bomber	1 bomb or lt. bomb	3	30
tactical aircraft	1 light bomb	3	20
hot air balloon	nothing	6 x wind	60
sailplane	1 amb. or gov't coolie	3 x wind	60
passenger airliner	4 ambassador/gov't coolies & may tow 1 sailplane	3	50
Spruce Goose	1 beer & 1 ambassador/gov't coolie & may tow one sailplane	3	30

6.1.2 Aircraft Movement

Cargo planes, C-5As, Spruce Geese, and planes on CAP (see Military Rules) are the only planes that may remain in the air over the end of a turn. No aircraft may stay in the air longer than its Flight Range, either within a turn, or over multiple turns. Aircraft may only take off from friendly airfields, and may only take off if there is friendly oil

within 72 phases by land movement; this is equivalent to the supply rules. Except where otherwise specified, aircraft may only land at airfields, and are destroyed if they attempt to land elsewhere. Except where otherwise specified, aircraft are unaffected by terrain.

Hot air balloons and sailplanes may not enter or cross mountains. Helicopters may also land in any clear square, and may take off from any clear square outside enemy ZoCs. Sailplanes may land in any clear square or at any airport (they may not land at a city without an airport, nor in forest, etc.). Sailplanes must be towed into the air by a cargo plane, C-5A, passenger airliner, or spruce goose, and then released in the same square as the airport from which they took off. Once released, the sailplane becomes a self-mobile object. It may carry one ambassador or government coolie while being towed as well as while flying.

6.1.3 Carrying Things

When being carried, self-mobile objects go through phases along with the unit carrying them, For example, a recon unit being carried on a cargo ship spends only 8 phases per border.

When being carried, land military units (including SACs) are considered 1 2/3 units each, and may not fit in cargo planes. Coolies are one object each. Note that coolies operating CMs may not carry anything over the end of a turn.

Except where otherwise specified, self-mobile objects may not carry other non-coolie self-mobile objects. Cargo ships, however, may carry any object which is self-mobile on land. Additionally, the following self-mobile objects may be carried by other self-mobiles: autos, motorbikes, light transports, rubber life rafts, sailboats, and hot air balloons.

6.1.4 Wind-based movement

Prior to moving sailboats, balloons and sailplanes, a player must roll to determine the direction the wind is blowing *towards*. This roll must be witnessed by at least one other player. 1=N, 2=E, 3=Q, 4=S, 5=W, 6=P. Wind-based movement then gets a multiplier depending on the movement direction relative to the wind direction:

1x	with the wind
2x	60°
4x	120°
8x	against wind

Thus on a roll of 1 a sailboat would take 6 phases/border to go N, 12 phases/border to go P or E, 24 phases/border to go W or Q, and 48 phases/border to go S.

6.2   Movable Objects

All resources and all non-self-mobile things built in factories are movable. When being carried, movable objects require phases to move as per the carrier. They are one object each for carrying purposes, and can carry nothing themselves, with these exceptions:

barge: moved only by a cargo ship (max. 4/cargo ship); carries 4 objects (none military).

bombs: are 1/4 of an object each.

food: is diffused (absorbed from a distance), and is 1/5 of an object when carried

light bombs: are 1/6 of an object each

oil: when moving through pipeline, spends 6 phases per border.

rolling stock: moved only by locomotives (max. 4/locomotive), may each carry 4 other objects each.

sailplanes: are considered movable while on the ground, and must be towed into the air by a cargo plane, C-5A, passenger airliner, or spruce goose, and then released in the same square as the airport from which they took off. Once released, the sailplane becomes a self-mobile object. It may carry one ambassador or government coolie while being towed as well as while flying.

torpedoes: are 1/4 of an object each.

regular coolies: are 1 object each when carried, and can't carry anything else while being themselves carried.

6.2.1 Stacking Limits

In the absence of warehouses, only five movable objects may be left on land squares. Not counted against the limit are self-mobile objects in the square, nor any objects being carried by said self-mobile objects, nor materials or CMs being used to build things in the square. (Note: coolies operating CMs cannot carry anything at the same time.)

6.3   Immobile Objects

Anything built by construction machines (with the exception of scratch building things which may also be built in factories) is immobile. Naval guns and anti-aircraft installed by a CM may be de-installed by CM over the end of a turn, but are immobile while installed. In the absence of a city, only one factory may be built on a land square.

6.4   The "Blitz" Rule

Two or more countries moving separately may not do anything that could not have been done if they had been moving as one country. No piece belonging to any country may move twice before all other countries have had the chance to move once.

The most common implication of this rule is that objects being traded may be unable to move immediately after the trade, if they have already moved in a previous owner's turn. It can also affect resource exploitation in a change of owners, operation of factories, multi-player military forces, etc.

6.5   River, Canal & Lake Movement:

Rivers, and canals are marked inside a space, but follow the edges of the space. Rivers and canals affect land movement when going from one space to another involves crossing one of them. There are two types of rivers: narrow (single line) and wide (double line). Narrow rivers and canals require 22 extra phases to cross by land; wide rivers may not be crossed without a bridge or the aid of a ship. Lakes block passage by land, and may not have bridges built across them.

Any land military unit standing on a narrow prevents passage of hostile non-military ships into that square; a (non-military) coolie may not make such preventions. Cruisers' passage on a narrow river may be stopped only by the presence of a land military unit containing one or more HAU. In these cases, the passage is blocked only in the square containing the land unit, not in adjacent squares. No land unit may prevent the passage of ships on a wide river.

A narrow river, having been widened, has all the characteristics of a wide river, except that units may cross it without ships or bridges. It is not possible to bypass a waterfall simply by widening the river. In a case where two or

more distinct river segments occur in a single square, each must be widened separately. It is not possible to "narrow" a river which has been widened.

Canals are man-made single-line rivers. Ships may only sail through a canal that is manned by a friendly coolie in each square of the canal that is moved through (for example, if a ship moves through a two-square canal, both squares must be manned by friendly coolies). A coolie manning a canal may not be doing other work over the end of a turn. Otherwise, canals are treated as if they were widened rivers (above). Canals may not be built through mountains. Canals may be crossed by land as if they were narrow rivers.

6.6 Miscellaneous Movement Rules

Self-mobile consumer goods do not become self-mobile until their EDU has been consumed.

Ships and barges may move in coastal spaces, and many ships can move in river spaces. Ships may not otherwise move on land. Outside of the owning player's turn, all ships shall be considered *at sea*, unless specifically stated to be beached or docked.

No land units may move across mountains except on mountain roads.

Oil consumed for military movement may be diffused (absorbed from a distance — see supply rules). Coal and oil may not be diffused for use in power stations.

Unlike earlier versions of Empire, squares may *not* be divided by terrain into sub-squares, unless appropriate optional rules are in play.

6.6.1 Desert Movement

All mechanized and motorized units (trucks, recon units, mech infantry, armor, etc.) treat desert as normal road. All other units double their phase costs for clear terrain. See also VII.B for rules on water supply.

6.7 Loading Rules

Loading and unloading normally takes zero phases. Any movable object except land military is considered as one unit for loading purposes. Land military are generally considered 1 2/3 units. Aircraft may be loaded and unloaded only at an airfield. Coolies and population are exempt from loading and unloading limits.

6.7.1 Naval Loading

A ship may exercise one of the following options in each turn. If a ship loads and unloads in different places in one turn, it is bound by whichever has the greater restriction:

1. at a port: fully loaded and unloaded
2. at a non-dock land square: 2 objects loaded and unloaded.
3. between ships at sea: any number of objects

Barges, yachts, sailboats, and luxury liners may be loaded and unloaded only at a dock. The loading and unloading capacity of such ships at a dock is limited as follows: a maximum of 5 objects loaded or unloaded per empty space in the dock (a dock has space for 12 sea units).

Cargo ships may not pick up anything from a sea square occupied by enemy land military, although they can unload land military into that square.

Rubber life rafts may only load and unload coolies at docks or to/from cargo ships.

Naval units (e.g. cargo ships) which can load and unload in a river square may load or unload onto the "other side" of the river, unloading into a square which the river does not actually enter. This unloading option may only be exercised if: (i) the object could normally be moved into the square; (ii) the river blocks land passage between the destination square and the square the unit is in; and (iii) there are no other restrictions which would prevent the naval unit from moving into the square and unloading the object, if the river entered the other square. In this case, the naval unit *takes time to unload*, equal to the movement cost of a coolie entering the destination square by land. This time requirement applies to both the naval unit and the unloaded object.

7 SUPPLY

7.1 Food Supply

A coolie dies immediately if either: (i) it does not have one unit of consumed for it every turn; or (ii) it is "out of supply" for two turns. This applies to military coolies as well, and is additional to their pay.

Food must be consumed at the beginning of every turn. Coolies must be fed on the turn on which they are created (on turn 1, however, all coolies are considered fed). Coolies which are out of supply must have food consumed for them, but they die if they are out of supply for two consecutive turns.

7.1.1 Diffusion

To be supplied with food, a coolie must be within 100 phases of friendly food. Being within 100 phases simply means that there must be some way in which that player's units *could* get the food to the coolies. Food does not have to actually be carried to coolies in order to be consumed. Food may be transported by "diffusion" from food squares to coolies within 100 phases of potential movement.

If a body of water is used to establish a line of supply, a friendly cargo ship must be present on that same body of water. Note that hostile naval zones of control may divide a body of water into two or more separate bodies for supply purposes. Hostile coolies in the same square do not interrupt each other's lines of supply; hostile military in the same square do not interrupt each other's lines of supply. Hostile military in the same square as a hostile coolie does interrupt the coolie's line of supply. Regular coolies may block the tracing of a line of supply through a square they occupy, with the above delineated restraints. Government and ambassador coolies may not block lines of supply.

7.2 Water Supply

Coolies and population *in desert* must receive fresh water every two turns. A regular distillery provides a source of fresh water if placed on salt water, i.e. adjacent to the ocean. To do so, it must be run by a coolie and be given one unit of power; per turn. Such a distillery may not be converted into a beer-type distillery, nor vice versa. An operating distillery will provide water for any and all friendly coolies within four squares. A lake or river will provide fresh water for any coolies or population within four squares.

Water, like food, cannot diffuse through mountains, hostile zones of control, etc.

8 MILITARY RULES

8.0 General Military Rules

A battle consists of one offensive roll of the dice in land, sea or air combat (including mixed battles), or the automatic elimination of a unit by land and/or naval forces.

In all cases of all types of combat, attacks and which units are attacking or defending are specified before any attacks are resolved.

In general, land units may attack adjacent squares, whereas naval and air units only attack units in the same square. There are some exceptions, however (e.g. artillery, naval guns, etc.).

8.1 Land Military

8.1.1 Army Unit Types

UNIT	COMBAT FACTOR	REG. ARMY?	PHASES TO ARM	BOMBING DEFENCE
Small Arms Coolie				
1 Coolie + 1 Small Arms Unit	1	NO	72,+$1	4
3 Infantry Regiments				
3 SACs + 1 Transport & Supply	1 ea.	yes	36	5
3 Infantry Brigades (1 Infantry Division)				
3 Infantry Regiments + 1 HAU	2 ea.	yes	36	6
3 Armor Brigades (1 Armor Division)				
3 Infantry Brigades + 1 Tank	3 ea.	yes	36	7
Recon Unit				
1 Infantry Regiment + 1 Tracked Transport	1	yes	36	5
moves as Truck				
Artillery Brigade				
1 Infantry Regiment + 1 HAU	AF=4 DF=1	yes	36	7
Mechanized Infantry Brigade				
1 Infantry Brigade + 1 Tracked Transport	2	yes	36	6
As Infantry Brigade but moves as Armor				
Airborne Regiment				
1 Infantry Regiment + 1 Air Trans Unit	1	yes	36	5
(may travel in C-5A Galaxies)				
Combat Engineers				
1 Infantry Brigade + 1 CM	2	yes	72, 72 to disarm	6

Each input unit involved in arming must spend the same, full amount of time to arm.

NOTE: 3 Brigades equal 1 Division

8.1.2 Military Movement

Small Arms Coolies, infantry regiments, infantry brigades, airborne regiments, and construction brigades move on land as do regular coolies. Recon units move like trucks. Armored and mechanized units move on clear terrain and road as do regular coolies, but treat desert as road. Armor and mech may not move into forests except on a road (see also below). Artillery units require 25 phases/border in clear terrain, 50 phases/border in forest, and 12 phases/border on road.

8.1.3 Regular Army

Small Arms Coolies (SACs) are *not* considered "regular army" units, but they *are* considered "military units."

Only regular army units may kill coolies on contact with the army unit's zone of control. Small arms coolies may only kill coolies which don't or can't retreat during said regular coolie's movement phase.

Regular army can have food support from any friendly and/or neutral route. SACs trace food supply like regular coolies. Other than the limitations mentioned above, SACs are military for all purposes: they may not

travel in trucks, nor in C-5A Galaxies; they consume chemicals for attacks on hostile military. They do not, however, consume oil for movement.

Regular army units consume 0.01 Oil per phase per Transport & Supply moving. This applies to phases spent in movement only, not in arming, nor while being carried in cargo ships (or C-5As for airborne).

8.1.4 Combat Engineers

Combat engineers may engage in construction while in hostile zones of control, using the CM incorporated in the unit. They may also engage in destruction as would a coolie. If in a hostile ZOC, they must participate in attacks upon hostile units, just like other military units.

8.1.5 Armor and Mechanized Units

Armor and mechanized infantry zones of control do not extend into forest squares. Although armored and mechanized brigades may move into forest squares via roads, when said roads are successfully bombed, or otherwise destroyed, these brigades must disarm their Tank or Tracked Transport (respectively) to move or attack out of the square. Once armor or mech has disarmed in a non-road forest square, they may not rearm their Tank or Tracked Transport until they have moved out of the forest.

8.1.6 Airborne Units

Airborne regiments are the only land military units which may travel in C-5A Galaxies. While in C-5A Galaxies, they have zero combat factor, do not consume oil for movement, and are 1 2/3 things for carrying purposes.

8.1.7 Arming and Disarming

SACs and regular military may arm in cargo ships, but otherwise may not use arming phases for any purpose other than arming. Arming phases may be overlapped with other armings during a turn, the total phases required being the phase cost of the greatest single arming (e.g. 3 SACs arming with 1 T&S and 1 HAU into an infantry division require 36 phases, while 3 coolies arming with 3 SAU, 1 T&S and 1 HAU into the same infantry division require only 72 phases each, not 108).

Time spent arming applies equally to all units involved. In the above examples all three units must spend the same full amount of time arming. Phases are time, not a cost that could be borne by just one of the units.

Arming sometimes involves 3 units needing one T&S, HAU or Tank to upgrade. In such cases, when starting with a single T&S, HAU or Tank, the resource may *not* be split into thirds in advance to allow a single unit to do such an upgrade; you must have three units available to participate in the upgrade in a single location. However, fractional units of these items may be created by units disarming, and once created in this fashion, may be used separately.

Military units which starve (or die of thirst) automatically disarm first: that is, they leave behind their arms units, T&S, etc. Unless otherwise stated, disarming takes zero phases, zero cost, and yields zero EDU. Units may not disarm in hostile ZOCs.

8.2   Land Combat

8.2.1 Zones of Control

A land military unit has a zone of control in the square that it occupies and in the six squares adjacent to it. Said zones of control do not extend into squares into which the military unit could not move because of terrain inhibitions. It is not possible for land units to move directly from one enemy controlled square to another. Note that air units do not have zones of control.

Once a land military unit enters a hostile zone of control, it must stop at once and engage in combat. An attacker must engage all hostile land military units who are in the zones of control of his land military units. All pieces in hostile zones of control must engage or be engaged in combat. Exception: the player need not attack units that exert their zone of control on him only across a river or bridge, *unless* the units are also in a hostile zone of control which is not exerted across a river or bridge. The attacker splits up attacks as he wishes, including using

units stacked together in separate attacks, or using units stacked separately in a single attack. All enemy units in a stack are considered to defend together.

Coolies in hostile SAC zones of control may produce resources and/or run factories. Coolies may not enter hostile zones of control, and *must leave* them at the end of their movement phase. Coolies in a hostile zone of control may not destroy factories, docks, etc. Because it is illegal to move from one enemy ZOC square into another, regular coolies in the same square as a SAC are unable to move.

Coolies in hostile regular military zones of control die immediately unless the owner of said military declares himself to be friendly to those coolies. Such friendliness may be selective as to squares, but not as to units within squares. Friendliness to some of a country's possessions does not imply friendliness to all of that country's possessions. It is possible for a player to be friendly to a country's units which are in turn hostile to him.

The act of making an attack on a country, or of killing another country's coolies, implies general hostility to all possessions of that country. Combat between different players' adjacent military units must then take place unless both players declare themselves to be friendly to each other, and they are assumed hostile unless otherwise noted.

8.2.2 Stacking Limitations

No more than 3 military land units may occupy the same square at the end of a movement phase. Units whose retreat routes result in overstacking with friendly units may do so, but their defense strengths may not add to the defense strengths of units already in the square. Units retreated into overstacking may not use the fact that they have already been attacked to prohibit attacks into that square (see 6.4, the Blitz Rule).

Only one naval gun and one anti-aircraft may be installed in a space. Because they have range, multiple naval guns or anti-aircraft may defend one space by firing from other spaces.

8.2.3 Overruns

Odds of *greater than 5-1* in land attacks are automatic elimination of the defending unit(s). Odds *greater than 3-1* with no possible retreat routes for the defender are also automatic elimination. An automatically eliminated unit may be bypassed and ignored in movement by units not involved in that particular battle.

In a case where an automatic bypass is obtained through the use of air support, and the odds are subsequently reduced to below those necessary for automatic elimination by successful action of the defender scrambling fighters against the bombers or TAC, all units which have moved ignoring the existence of the "automatically eliminated" unit or its zone of control are eliminated regardless of the outcome of the battle.

8.2.4 Attack Rolls, Retreats & Advances

To determine attacks, the attacking player totals the attack and defense strength of the respective units, and reduces these to an odds-ratio, always rounding fractional odds in favor of the defender. A player may make as many attacks as he wishes, with the prohibition that no unit may attack or be attacked twice in a given turn. The attacking player consults the Combat Results Table, and rolls a die to determine the outcome. Said die roll must be witnessed, and it is customary for the defender to be among the witnesses.

Bombing may be used in battles on land: 1 combat factor per bomb or light bomb. No more than 3 combat factors may be added to a single square in this manner. Navy may add to land battles also, adding 1 combat factor per 3 naval factor of ships in the same square as the defending unit. No more than 3 combat factors may be added to a single battle in this manner.

Retreats are determined by the retreating player. A normal retreat is one space, or two spaces from bombing. Retreat routes may not enter or pass through hostile zones of control. Units which cannot retreat their full distance due to zone of control or terrain restrictions are eliminated from play instead.

Odds of 6-1 or better (or 4-1 or better with no retreat route) mean automatic elimination (see 8.2.3). Attacks may not be made at odds less than 1-6, and movement of military units which would result in such attacks may not be made by the attacking player.

Units involved may, at the attacker's option, into the position occupied by the defeated defender if, and only if, the defender's position was doubled, and the attack cleared said position of all defenders. The decision to advance must be made immediately after the attack, and before the rolling of other attacks.

8.2.5 Land Combat Results Table

ODDS (Attacker - Defender)

ROLL	1-4	1-3	1-2	1-1	2-1	3-1	4-1	5-1	%ile
2	A E	A E	A E	A E	A E	A R	D R	D R	01-03
3	A E	A E	A E	A E	A E	A R	D R	D R	04-08
4	A E	A E	A E	A E	A R	A R	D R	D R	09-17
5	A E	A E	A E	A R	A R	EX	D R	D E	18-28
6	A E	A E	A R	A R	EX	EX	D R	D E	29-42
7	A E	A E	A R	EX	EX	D R	D E	D E	43-58
8	A E	A E	A R	EX	EX	D R	D E	D E	59-72
9	A E	A R	EX	D R	D R	D E	D E	D E	73-83
10	A E	A R	EX	D R	D R	D E	D E	D E	84-92
11	A R	EX	D R	D R	D E	D E	D E	D E	93-97
12	EX	EX	D R	D E	D E	D E	D E	D E	98-00

A E — Attacker Eliminated   D E — Defender Eliminated
A R — Attacker Retreats   D R — Defender Retreats
E X — Exchange. All units of the force with the lower total Combat factor are eliminated. The other side picks units of their own to lose which have a total Combat factor equal to or greater than that of the eliminated force.

8.2.6 Ranged Artillery in the Attack

Artillery has a two square range, and therefore need not be adjacent to a unit to attack it. This two square range may only be used in support of another unit's attack, said attacking unit being adjacent to the defending unit. When firing two squares against anything but other artillery, exchanges and attacker eliminations or retreats never affect the ranged artillery.

Ranged artillery may not fire over mountains through which they could not move due to terrain restrictions.

8.2.7 Opposed Military in the Same Square

Airfields, docks and warehouses are unusable in this situation. Any player with land military in the same square may destroy any oil, chemicals, or bombs in the square. Regular coolies, etc., may undertake no action except the consumption of food without the consent of the opponent. Ships may scuttle, planes may crash if in the air, but no action not mentioned above is permitted without consent of the enemy player.

8.2.8 Terrain Effects on Land Combat

Land military defending against an attack across a mountain border have their defense factor doubled. Land military in a square containing forest multiplies its defense factor by 1.5. A land military unit attacked by other land military units, all of which are attacking across narrow rivers, has its defense factor doubled. Attacking units, disembarking that same turn from a cargo ship onto a coastline square, are treated as units attacking across a narrow river. If they did not disembark that turn, and are not attacking across an actual narrow river, then they may instead serve as flanking units.

For purposes of land attacks, canals are treated as narrow rivers, and a unit attacking across a bridge over a body of water is considered to be crossing a narrow river.

Defense bonuses are not cumulative, and with terrain defense bonuses alone, no effect better than doubling of defense factor is possible. With fortresses and fortified lines, no effect better than tripling is possible.

8.2.9 Fortresses and Fortified Lines

Fortresses (forts, superforts) and fortified lines (pillboxes) are built along the boundaries of squares. They defend against any attack moving across the boundary along which they have been built. They must face in a specified direction; they do not defend against attacks from both sides of the line, but only against the side that they are stated to face. Such statements must be made on the turn of construction.

Attacks are not affected if they move across the line in the direction that the line faces (from "behind the line").

Fortified lines double defense of the units behind them, unless flanked. They triple the defense of units both behind them and on mountains, unless flanked.

Fortresses triple the defense of units behind them. If manned by a coolie, they have three combat factors of their own, and four if on a mountain. Fortresses may also be flanked, and have no defense bonuses or inherent defense factors when flanked.

Zones of control do not extend through fortresses or fortified lines.

Fortresses and fortified lines may not be destroyed unless vacant or manned by a friendly coolie.

8.2.10 Landings

If the landing square is unoccupied by hostile military, military units may land. If it is so occupied, landing units must first clear the landing square of said hostile units through attacks. If this is done, the units may land. If hostile units remain in the landing square after the attack, the landing units are eliminated.

Units landed against in the above manner have their defense factor doubled, unless flanked by other attacking units.

Units may not land in hostile naval zones of control.

8.2.11 Flanking

If a piece is attacked from more than one square, and if against some of the attacking squares its defense factor is doubled, while against others the defense factor is not doubled, then it is not doubled against any of the attacking pieces. This applies to rivers, canals, landings, pillboxes, etc.

8.3   Naval Combat

8.3.1 Naval Combat Factors

For military ships with a zero combat factor (because of damage or lack of oil), and other ships with zero combat factor, see special tables and rules. Navy at sea with no oil supply may not move, and loses all combat factor. Navy is reactivated as soon as enough oil is consumed to keep it at sea.

Aircraft Carriers (CV): 2
Battleships (BB): 6
Cargo Ships (CS), barges, yachts, luxury liners, sailboats, rubber life rafts: Zero. See special tables and rules.
Cruisers (CA): 2
Destroyers (D): 1
Fishing Ships (FS): Sink in hostile naval ZOC.
Naval Guns (NG): 6 in adjacent squares, 12 in the same square
Oil Tankers: Sink in hostile naval ZOC.
Pirate ships: ½
Submarines (UB): Zero attack (but see rules for torpedoes), 2 defense when submerged, as cargo ships when surfaced.

8.3.2 Naval Zones of Control

All ships with naval combat factors have naval zones of control. Ships with no naval combat factor (either naturally, or because of damage or lack of oil) may not enter hostile naval ZOCs.

When a ship enters a hostile naval zone of control, (i.e. adjacent or same square) it must either stop, or advance into the square containing the hostile ship(s) and attack. If said ship began its movement phase in the same square as a hostile ship, it must either stay and attack, or immediately leave. Note that leaving ships may pass through the ZOC surrounding the enemy ship in whose square they started, without stopping.

Submarines have special rules regarding ZOCs: see below.

Naval ZOCs do not extend into docks.

8.3.3 Naval Guns (NG)

Naval guns may roll a separate attack on each hostile ship either (1) entering any adjacent square or the same square as the gun, or (2) remaining unmoving at the end of the owner's turn in any adjacent square or the same square as the gun. Each attack by a naval gun against a ship is resolved as if the target were the only ship in the square. For example, three battleships sailing adjacent to a naval gun would *each* be attacked at odds of 1-1, not in a single grand attack of 1-3. Ships surviving this combat may proceed into the next square, where if they are still adjacent, or in the same square, they can be again attacked by the NG with the appropriate attack factor. Attacks are again conducted individually for each ship. Ships moving into the same square as a NG may attack the NG *after* surviving its barrage. Ships already in the same square as a NG at the start of their turn may attack the NG before it fires on them. Naval guns only shoot at a ship as it enters a square (within range), or if the ship starts within range, and does not move.

When attacking, naval guns do not suffer adverse combat results.

A NG must be installed before it may operate—see Installation on EDU sheets. Only one NG may be installed in a square. Installation occurs over the end of a turn, and is dome by a coolie with a CM, using a BM. NGs may not operate until installation is complete, nor may they operate unless manned by a coolie, who may do nothing else over the end of the turns he mans the gun. NGs may be "de-installed" as if they were factories being scrapped.

NGs have zero defense factor against land attacks.

8.3.4 Aircraft Carriers

Carriers have a capacity for six air units, which may be fighters, helicopters or TAC air. TAC count as 1 1/2 units each for this purpose. Additionally, carriers may store four light bombs in addition to the light bombs the TAC may be carrying. Carriers may not carry bombers or other types of aircraft.

8.3.5 Pirate Ships

At the end of its turn, a pirate ship may do one of the following:

(i) Raid a cargo ship. A raided cargo ship may, at the option of the owner, either scuttle or allow the pirate to steal its cargo. Coolies may not be stolen, nor may they inhibit theft. Land military aboard the cargo ship stops the pirate ship from raiding.

(ii) Shoot at a cargo ship. A die is rolled by the pirate ship's owner (witnessed). A roll of a 1 or 2 sinks the cargo ship. A roll of 3 destroys the cargo. Rolls of 4-6 have no effect.

8.3.6 Submarines

Submarine movement costs are 8 phases/square, as listed in 6.1.1. They require 0 phases to surface, and 25 to submerge.

If a submarine submerges during a turn, it must surface during the following turn. A submarine may not dive in the same turn, after surfacing. A submarine may not fire torpedoes after surfacing in the turn which it surfaces. A submarine may neither submerge nor travel submerged in a narrow river or in a canal. A submerged submarine may only be attacked by cruisers and destroyers, and may not be bombed.

When a submarine is attacked by surface ships, results adverse to the attackers are ignored.

The convoy rule (8.3.7) affects submarines only to the extent that the convoying force comprises cruisers and/or destroyers.

A submarine has no naval attack factor. It may carry three torpedoes, and may fire one per turn, at the end of its movement phase. Torpedoes are fired against ships in the same square as the submarine. The attack is resolved at the same time as other combat. One torpedo has the effect of one combat factor. Submarines may fire torpedoes whether they are submerged or surfaced, ignoring combat results adverse to themselves.

A submarine does not have a naval ZOC, unless it is both surfaced and carrying torpedoes, in which case it has a ZOC in its own square only. Submerged submarines ignore naval ZOCs.

Multiple torpedo attacks may be combined like regular naval combat factors are; hence, three attacks may be resolved separately, as one-factor attacks, or in any combination desired, producing a one-factor and a two-factor attack, or a single three-factor attack.

8.3.7 Convoys

A cargo ship, oil tanker, fishing ship, or similar non-military ship, or a damaged ship, when escorted by at least 3 naval combat factors, is under convoy. Convoyed units may not be attacked unless the convoying units are all attacked at odds of at least 1 - 1. However, submarines may ignore any convoying vessels which are not cruisers.

A given unit may either be providing convoy protection, or convoyed by others, but not both at the same time.

8.3.8 Resolving Naval Combat

Naval battles must be broken down such that in any discrete attack, one ship attacks or is attacked by any combination of ships. All defenders must be engaged at odds of at least 1-3. All ships in the same square as hostile navy must attack.

8.3.9 NAVAL COMBAT RESULTS TABLE

	Attacker to Defender							
ROLL	1 - 3	1 - 2	1 - 1	2 - 1	3 - 1	4 - 1	5 - 1	%ile
1	A Sv	A Sv	A Sv	A Hv	A Hv	A Lt	D Lt	01-17
2	A Sv	A Sv	A Hv	A Lt	miss	D Lt	D Hv	18-33
3	A Sv	A Hv	miss	miss	D Lt	D Hv	D Sv	34-50
4	A Hv	A Lt	miss	D Lt	D Hv	D Sv	D Sv	51-67
5	A Lt	miss	D Hv	D Hv	D Sv	D Sv	D Sv	68-83
6	D Lt	D Hv	D Sv	D Sv	D Sv	D Sv	D Sv	84-00

A - Attacker   Sv - severe, 3 steps damage
D - Defender   Hv - heavy, 2 steps damage
                      Lt - light, 1 step damage

Fractions are rounded in favor of the defender.
Odds worse than 1-3 are illegal, as with land combat. Such attacks may not be launched.
Odds of 6-1 or better are automatic elimination.
An automatically eliminated unit may be bypassed and ignored by all units not involved in the automatic elimination (see Overruns in land combat).

8.3.10 Cargo Ship and Zero Combat Factor Results

All ships with zero combat factor are covered by these rules (including ships which have zero combat factor due to damage or insufficient oil). If attacked by 4 or more combat factors, the ship is sunk. If attacked by 3 or less combat factors, a roll of 1-5 on a six-sided die sinks the ship. On a six the ship is unharmed.

Beached ships may not be attacked by naval combat.

8.4 Naval Damage

A ship or naval gun loses two full combat factors for each step of damage it takes. A ship or NG is not destroyed when reduced to zero combat factor, but if it loses more steps than it has combat factors, it is destroyed.

Aircraft carriers are an exception; they require three steps damage to be sunk, despite only having two combat factors. With one step damage, they lose their naval combat factors, and may only fly half their planes. With two steps damage they may fly no planes.

Damaged ships move at half speed: double the number of phases it takes them to move a square.

A damaged ship which is not sunk may be repaired in any friendly dock, regaining 1 step (two combat factors) when repaired by a coolie and a CM over the end of the turn. This costs $1 and yields 1 EDU. A maximum of two BB or 4 CA may be repaired in one dock at one time.

A damaged NG which has lost six or more steps must be replaced by a new gun and installation. With less damage, it may be repaired on site at one step (combat factor) per turn, by a coolie and a CM over the end of the turn. This costs $1 and yields 1 EDU.

As with all multiple turn production, multiple step ship or NG damage may be repaired more quickly, or even in one turn, by the use of sufficient coolies and CMs - one of each per step of damage.

8.5 Mixed Battles

8.5.1 Navy Attacking Land

Each 3 naval combat factors act as one bomb for purposes of land combat. This is "bombardment." No more than 3 combat factors may be contributed to a single battle in this way. Bombarding naval units may not engage or be engaged in any naval battle in the same turn. Bombarding ships must be in the same square as the bombarded units or objects. NGs may shell an adjacent square, using their adjacent square combat factor.

Navy may bombard land unsupported by other land military, in which case said combat is resolved on the bombing tables; an asterisk there (*) means one step damage to the bombarding force. Such unsupported bombardments are resolved individually, and there is no limit to the number of ships that may bombard in this manner.

See rules subsections 8.6.3,11, and 12 for details on bombing.

8.5.2 Land Attacking Navy

Each three units of heavy arms (generally three brigades' worth) act as one bomb. Bombarding land units may not engage in any land battles in the same turn. Bombarding and bombarded units must be in the same square. No more than three combat factors may be contributed in this way to a naval battle in progress. Unsupported attacks are rolled on the bombing table.

See rules subsections 8.6.3,11, and 12 for details on bombing.

8.5.3 Land and Navy Against Air

The attacks of non-air units against air are resolved on the following table. Such attacks are generally, although not always, defensive in nature, made against the air units during the other player's turn. The anti-air combat factor of land and navy units is given in the air-land combat chart. The table is rolled on once for each unit attacking the air units (exception: see Anti-Aircraft). Note that anti-air attacks use chemicals just like land attacks, per attack made.

```
Target Modifiers to Die Roll
-3      Neither bombing nor landing
-2      In adjacent square
-1      C-5A Galaxy, Bomber
+1      Helicopter
+2      Cargo Plane, Passenger Airliner
+4      Hot Air Balloon
```

ANTI-AIR ABILITY

ROLL	1	2	3	4	5	6	7	%ile
2	-	-	-	-	-	-	-	01-03
3	-	-	-	-	-	-	-	04-08
4	-	-	-	-	-	-	-	09-17
5	-	-	-	-	-	-	abort	18-28
6	-	-	-	-	-	abort	abort	29-42
7	-	-	-	-	abort	abort	abort	43-58
8	-	-	abort	abort	abort	abort	elim	59-72
9	-	abort	abort	abort	elim	elim	elim	73-83
10	abort	abort	abort	elim	elim	elim	elim	84-92
11	abort	abort	elim	elim	elim	elim	elim	93-97
12	elim	elim	elim	elim	elim	elim	elim	98-00

8.6   Air Combat

8.6.1 Fighter - Bomber Combat Results Table:

ROLL	2 - 1	1 - 1	1 - 2	%ile
1	1 B elim	F elim	F elim	01-17
2	1-1 exch	F aborts	F elim	18-33
3	B elim*	B aborts	F aborts	34-50
4	B elim	B elim*	1-1 exch	51-67
5	B elim	B elim	1 B elim	68-83
6	B elim	B elim	2 B elim	84-00

* Bomber may drop bomb

8.6.2   Fighter - Fighter Combat Results Table

ROLL	2 - 1	1 - 1	1 - 2	%ile
1		A E	A E	A E	01-17
2	EX	A E	A E	18-33
3	D E	EX	A E	34-50
4	D E	EX	A E	51-67
5	D E	D E	EX	68-83
6	D E	D E	D E	84-00

EX (Exchange): The weaker side is eliminated. Stronger side loses a number of combat factors equal to the weaker side (their choice of units).

If a cargo plane, C-5A, hot air balloon, passenger aircraft, or spruce goose is attacked (by planes which have penetrated its escort, if any), the results are as follows:

1 fighter vs. one non-combat air unit — the non-combat unit is destroyed on a roll of 1-5, and unaffected on a 6.

More than one fighter against a non-combat air unit — the unit is automatically destroyed.

A lesser number of fighters attacking a greater number of non-combat air units — no effect, unless individual planes are designated as targets.

8.6.3 Bomber Combat Results Table

ROLL	D E F E N S E F A C T O R							%ile
	1	2	3	4	5	6	7	
1	-	-	-	-	-	-	-	01-17
2	L	L	-	-	-	-	-	18-33
3	S	L	L	L	-	-	-	34-50
4	S	S	S	L	L	L	-	51-67
5	S	S	S	S	S	L	L	68-83
6	S	S	S	S	S	S	S	84-00

S: Severe damage to target
L: Light damage to target

8.6.4 Aborting Air Missions

Certain rules call for an air mission to abort. When a mission aborts, it means that the aircraft returns directly to its air base of origin on that turn. If unable to return to its airfield of origin, it must attempt to return to the nearest friendly airfield.

8.6.5 Scrambling

Any player may scramble without notice against any military planes attacking his possessions. All other cases need scramble notices. Scramble notices against planes attempting to land in cities must be specific as to the location of the city. Scramble notices against bombing must be specific as to unit defended, owner of unit, and duration of protection.

Scrambling aircraft move one square less than the aircraft they are scrambling against. Scrambling consumes no oil. Scrambling aircraft need not have been inactive during the game turn in which they scramble, i.e., scrambling uses no regular-turn phases.

An aircraft carrier's planes may scramble to defend against attacks launched from other carriers in the same square.

The distance scrambling aircraft may fly is not affected by non-flight movement of the plane(s) being scrambled against.

As a general rule, the distance flown by a player being scrambled against is determined by the entire length of flight in a given turn, regardless of intermediate stops. However, there is an exception to this rule, illustrated by the following example. E.g. Player X flies from point A to point B, then back to point A. In this case, player Y, who has a scramble notice up against point A, need only consider the phases from B to A for scrambling purposes, and not all the phases from A to B back to A.

One fighter may not scramble against more than one square at a time.

8.6.6 Combat Air Patrol (CAP)

Over the end of a turn, a player may assign fighters and/or TAC to CAP missions. CAP consists of flying fighters or TAC to a specific square and leaving them there (in the air) over the end of a turn. Planes flying CAP act as scrambling aircraft against any planes attempting to bomb units within that square or violate posted scramble notices *for that square only*. Planes flying CAP must be within 12 squares of a friendly air base. (Elimination of the friendly air base used for CAP, either through destruction or capture by hostile forces, does not negate the CAP mission for that turn.)

CAP planes, on the owning player's next turn, must return to an air base before taking any other action. Airplanes on CAP may take no other action during the turn they are placed on CAP — they may not be used in scrambling against squares other than the one they are patrolling.

CAP may only take place over an object which is on the bombing tables.

TAC on CAP may not have carried bombs on the same turn they go on CAP.

Oil must be consumed for CAP aircraft on both the turn in which it goes on CAP, and on the next turn, when it returns.

One may not scramble to defend aircraft on CAP.

8.6.7 Tactical Air Craft (TAC)

TAC may serve as either fighters or bombers. When serving as fighters, they carry no bombs, and function as 1/2 a fighter. When serving as a bomber, they carry only light bombs, which generally function as 1/2 a regular (heavy) bomb. However, light bombs function identically to heavy bombs when used against naval vessels, or when used in support of a military attack (in which case either type of bomb adds one combat factor to a given battle). Only three combat factors may be added to any given battle with bombing. When serving as a bomber, TAC defend as 1/2 a bomber (i.e. one fighter may attack one TAC at 2-1).

A TAC may elect to jettison its bomb in mid-mission and serve instead as a fighter.

8.6.8 Anti-Aircraft (AA)

Anti-aircraft represents a mix of guns and Surface-to-Air-Missiles. Anti-aircraft may fire once per eligible plane, per eligible square. However, one AA installation may attack no more than five planes between the beginning of the owner's turn and the beginning of his next turn.

AA must be installed to operate (see *installation* on the EDU sheets). Only one anti-aircraft may be installed in a square. It must be manned by a coolie, who may do nothing else over the end of the turn. AA may be "de-installed" as if it were a factory. AA in city squares do not occupy a minor square of the city.

8.6.9 Combat Helicopters

Combat helicopters work like TAC for combat purposes. They have unusual movement capabilities, in that they may land in any clear area, and may take off from any clear area outside enemy ZoCs.

8.6.10 Drop Tanks

Any combat aircraft (fighter, TAC, or bomber) may carry one drop tank. This is in addition to carrying a bomb, if any. Having a drop tank doubles the range of an aircraft. In some cases, this may enable it to stay in the air for two turns instead of one (i.e. it may remain in the air over the end of one turn before returning to base). The plane still consumes oil normally; the oil used in constructing the drop tank confers no special bonus. Drop tanks are not reusable. They are destroyed upon use or when jettisoned.

8.6.11 Bombing

In general, a bomber may drop one bomb during its turn against any object on the bombing tables, provided that the bombed player has not successfully scrambled against the bomber. If the bomber gets through the fighter cover and anti-air defences, if any, the bomb is dropped, the bombing table is consulted, and the result is cross-indexed with the bombing defense factor on the bombing results table, and the noted effects are applied.

In most cases light bombs serve as 1/2 a bomb, 2 of them being required for any effect (see the section on TAC for exceptions, against ships and supporting attacks).

Multiple bombing attacks on a single unit are not cumulative. They are rolled separately, and only the most severe result to the defender is applied. However, the "*" result on the effects table is counted each time it appears, and may apply to more than one bomber.

A partially completed item (e.g. a factory) may be bombed as if it were completed.

The cargo of self-mobile units may not be bombed separately from the self-mobile unit itself.

If a coolie in a square containing other coolies is successfully bombed, the other coolies may not take over the bombed coolie's task until the owning player's next turn.

When a unit is forced to retreat from bombing results, it must retreat two squares. If it cannot do so, because of hostile ZOCs or terrain restrictions, it is eliminated instead.

Forests add one to an object's bombing defense factor.

Pillboxes and forts are bombed separately from their garrisons, and add one or two, respectively, to the defense factors of the garrisons when the garrisons are bombed. Mountains and forests do not increase the bombing defense factor of the pillbox, fort, or garrison.

The convoy rule applies to air attacks also. Each of the escorting naval ships must be bombed before the escorted ship may be bombed.

When bombing a square containing hostile military which have at least 2 Heavy Arms Units among them, each military unit must be bombed before anything else is bombed. This does not apply to military in a warehouse.

Natural docks may not be bombed; ships in natural docks must be bombed individually. Ships in man-made docks may not be bombed; rather, the dock must be bombed.

8.6.12 Bombing Defense Chart

ITEM	DEF	ANTI-AIR	SEVERE (S) DAMAGE	LIGHT (L) DAMAGE
other movable whoopies	1	0	destroyed	destroyed
other self-mobile whoopies	3	0	destroyed	damaged **
empty space	0	0	no effect	no effect
Amusement Factory (AMF)	2	0	destroyed	damaged **
Anti-Aircraft (AA)	6	7	destroyed	damaged **
Airborne Regiment	4	1	retreat & destroy ATU	retreat
Air Transport Unit	3	0	destroyed	destroyed
Airfield	6	0	destroyed & contents lost	1/3 contents lost
Air Works (AW)	4	0	destroyed	damaged **
Al	7	0	destroyed	destroyed
Aluminum Refinery (ALF)	3	0	destroyed	destroyed
Armored Brigade	5	2	retreat & destroy Tank	retreat
Artillery Brigade	3	4	retreat & destroy HAU	retreat
Barge	3	0	sunk	lose cargo
Battleship (BB)	6	2	3 steps damage	1 step damage
Bomber (grounded)	2	0	destroyed	damaged **
Bombs	1	0	destroyed	destroyed
Bridge	2	0	destroyed	destroyed
BM	3	0	destroyed	destroyed
Building Materials Factory	3	0	destroyed	damaged **
Bx	7	0	destroyed	destroyed
C	3	0	destroyed	destroyed
C-5A Galaxy (grounded)	2	0	destroyed	damaged **
Cargo Plane (grounded)	2	0	destroyed	damaged **
Cargo Ship (CS)	3	0	sunk	lose cargo
Cargo Shipyard (CSY)	4	0	destroyed	damaged **
Carrier (CV)	5	3	sunk	1 step damage
Combat Engineers	6	0	retreat & destroy HAU & CM	retreat & destroy CM
Constr. Mach. Factory	3	0	destroyed	damaged **
Consumer Goods Factory	2	0	destroyed	damaged **
Coolie	3	0	retreat	retreat
Construction Machine	4	0	destroyed	damaged **
Cruiser (CA)	4	2	sunk	1 step damage
Cu	5	0	destroyed	destroyed

Destroyer (D)	4	1	sunk	1 step damage
Distillery	2	0	destroyed	damaged **
Dock (man-made only)	6	0	destroyed, 1/2 contents lost	1/3 contents lost
Drop Tank	1	0	destroyed	destroyed
Electronics Factory (ELF)	2	0	destroyed	damaged **
Fe	7	0	destroyed	destroyed
Fighter (grounded)	2	0	destroyed	damaged **
Fishing Ship (FS)	1	0	sunk	sunk
Food	1	0	destroyed	destroyed
Fort	7	2	damaged **	damaged **
Heavy Arms Unit (HAU)	4	0	destroyed	damaged **
Heavy Arms Works (HAW)	4	0	destroyed	damaged **
Heavy Machines (HM)	4	0	destroyed	damaged **
Heavy Machine Factory (HMF)	3	0	destroyed	damaged **
Heavy Transport Works (HTW)	4	0	destroyed	damaged **
Helicopter (any type, grounded)	1	0	destroyed	damaged **
Infantry Brigade	5	2	retreat & destroy HAU	retreat
Infantry Regiment	5	1	retreat & destroy T&S	retreat
Light Bombs	1	0	destroyed	destroyed
Light Metal Works (LMW)	2	0	destroyed	damaged **
Light Transport Works (LTW)	4	0	destroyed	damaged **
Locomotive	4	0	destroyed	damaged **
Luxury Factory (LXF)	2	0	destroyed	damaged **
Luxury Liner	3	0	sunk	sunk
Mountain Road	3	0	destroyed	damaged **
Naval Gun (NG)	5	2	3 steps damage	1 step damage
Naval Shipyard (NSY)	4	1	destroyed	damaged **
Oil	1	0	destroyed	destroyed
Oil Tanker	1	0	sunk	sunk
Pillbox	5	1	destroyed	damaged **
Pipeline	2	0	destroyed	destroyed
Pirate Ship (PS)	3	1	sunk	lose cargo
Plastics Factory	2	0	destroyed	damaged **
Power Line	2	0	destroyed	destroyed
Power Station (PS)	3	0	destroyed	destroyed
Recon Unit	5	1	retreat & destroy Tracked Tr.	retreat
Railroad	2	0	destroyed	destroyed
Rolling Stock	4	0	destroyed	damaged **
Rubber Factory (RF)	3	0	destroyed	damaged **
Road	2	0	destroyed	destroyed
Rr	3	0	destroyed	destroyed
Small Arms Coolie (SAC)	4	1	retreat & destroy SAU	retreat
Small Arms Unit (SAU)	4	0	destroyed	damaged **
Small Arms Works (SAW)	4	0	destroyed	damaged **
Soap Factory	3	0	destroyed	destroyed

St	7	0	destroyed	destroyed
Steel Mill (StM)	3	0	destroyed	destroyed
Submarine (surfaced)	3	0	sunk	no effect
Submarine (submerged)	7	0	sunk	no effect
TAC Air (grounded)	2	0	destroyed	damaged **
Tank (unoccupied)	4	0	destroyed	damaged **
Tool & Die (T&D)	2	0	destroyed	damaged **
Tool and Die Works (T&DW)	3	0	destroyed	damaged **
Torpedoes	1	0	destroyed	destroyed
Tracked Transport	3	0	destroyed	damaged **
Transport & Supply (T&S)	2	0	destroyed	damaged **
Truck	2	0	destroyed	damaged **
Warehouse	3	0	destroyed, 1/2 contents lost	1/3 contents lost
Wood	3	0	destroyed	destroyed
X	3	0	destroyed	destroyed
Yacht	1	0	sunk	sunk

When a unit is forced to retreat from bombing results, it must retreat two squares. If it cannot do so, because of hostile ZOCs or terrain restrictions, it is eliminated instead.

** Damaged items are unusable, but may be repaired (naval military units are slightly different: see "Naval Damage"). The process requires one coolie and one CM for one turn, costs $1, and yields one EDU. Damage is cumulative, so something damaged four times would take four coolie/CM turns, costing $4 and yielding 4 EDU. Anything damaged more times than its defense factor is destroyed. Any other amount of damage can be repaired over one or more turns, with sufficient resources. At the owner's option, a damaged item may be considered to have been destroyed instead.

9 ASSORTED CHARTS

9.1 Things Built by Construction Machines

Note that building anything in a swamp takes +1△

Name	Resources	$ - EDU
Airfield	△	1 - 1
Air Works	T&D, BM	1 - 3
Aluminum Refinery	BM	1 - 3
Amusement Factory	HM, BM	1 - 4
Bridge	BM or 2 Fe	1 - 3
Building Material Factory	HM, BM	1 - 3
Canal (1/BM)	BM	1 - 3
Cargo Shipyard	HM, BM	1 - 3
City	BM	1 - 3
Consumer Goods Factory	T&D, BM	1 - 4
Construction Machine Factory	BM	1 - 3
Distillery (either type)	BM, Cu	1 - 6
Dock	△	1 - 2
Electronics Factory	T&D, BM	1 - 4
Fort (4 squares)	3 HAU, SAU, BM	1 - 3
Heavy Arms Works (3 turns)	HM, T&D, BM	3 - 8
Heavy Machinery Factory	St, BM	1 - 6
Heavy Transport Works	HM, T&D, BM	3 - 9
Installation	BM	1 - 3
Light Metal Works	T&D, BM	1 - 4
Light Transport Works	HM, T&D, BM	3 - 10
Luxury Factory	T&D, BM	1 - 4
Mountain Road	BM + Road	1 - 2
Naval Shipyard (3 turns)	HM, BM	3 - 8
Pillbox	SAU, BM	1 - 3
Pipeline (6/Al)	Al	1 - 3
Plastics Factory	T&D, BM	1 - 4
Power Line (6/Cu)	Cu	1 - 3
Power Station	BM, Cu	1 - 5
Railway (6/St, 3/Fe)	St or Fe	1 - 1

River Widening	△	1 - 1
Rubber Factory	T&D, BM	1 - 3
Road (6 per BM or 3 per △)	△	1 - 1
Small Arms Works (2 turns)	HM, BM	2 - 5
Soap Factory	BM, X	1 - 3
Steel Mill	BM	1 - 3
Tool & Die Works	BM, St	1 - 6
Underwater Pipeline (6/Rr)	Rr + Pipeline	1 - 3
Underwater Power Line (6/Rr)	Rr + Power Line	1 - 3
Warehouse	△	1 - 2

9.2   Scratch Building

Name	Resources	$ - EDU
Cargo Ship	2 Fe, C, X	1 - 8
Cargo Plane	2 Al, Rr, Cu	1 - 8
Housing (Consumer good)	△	1 - 6

MISCELLANEOUS

Colony	1 Colony piece	1 - 1
Scrapping (done by CM)	△	1 - 1
Arming SAC	SAU, coolie	1 - 0

2 △ may be substituted for 1 BM any time.
Building anything in a swamp takes +1△

CONSTRUCTION MACHINES: All items take 1 CM for one turn except:

Naval Shipyard: 1 CM, 3 turns
Small Arms Works: 1 CM, 2 turns
Heavy Arms Works: 1 CM, 3 turns
Power Line, Pipeline, or Road:
on plain land, or existing road: 1 CM/6 squares/1 turn
through forests: 1 CM/3 squares/1 turn
Canal: 1 CM/border/1 turn
Mountain road: 1 CM/1 square/1 turn
Bridge: CM must travel on ship
UW power line or pipe line: 1 CM on ship/6 squares/1 turn

9.3 Things Built in Factories

Name	Resources	$ - EDU	Factory
AA Guns (2)	St, X	1 - 7	HAW
Air Transport Unit	X, Rr	1 - 5	LTW
Aluminum	Bx, 1 unit power	0 - 0	ALF (max. 5 Al/turn)
Barge	△, Fe	1 - 6	CSY or NSY
Battleship	St, X, O	3 - 13	NSY (3 turns)
Bomber	Al, Cu, Rr, O	1 - 8	AW
Bombs (4)	X	1 - 4	SAW
Building Materials (2)	3△	1 - 8	BMF
Cargo Plane	Al, Cu, Rr	1 - 8	AW
Cargo Ship	Fe, C, X	1 - 8	CSY or NSY
Carrier	St, X, O	3 - 13	NSY (3 turns)
C-5 Galaxy Transport	2 Al, 2 Cu, 2 Rr, 2 O	2 - 19	AW (2 turns)
Combat Helicopter	Al, Cu, Rr, O	1 - 8	AW
Construction Machine	St	1 - 6	CMF
Cruisers (2)	St, X, O	2 - 11	NSY (2 turns)
Destroyers (3)	St, X, O	2 - 11	NSY (2 turns)
Drop Tanks (4)	Al, O	1 - 5	AW
Fighters (2)	Al, Cu, Rr, O	1 - 8	AW
Fishing Ships (6)	Fe, C, X	1 - 8	CSY or NSY
Fresh Water	Salt Water, power	1 - 1	Distillery
Heavy Arms Units (3)	St, X	1 - 7	HAW
Heavy Machine	St	1 - 6	HMF
Light Bombs (6)	X	1 - 4	SAW
Locomotive	St, X	1 - 8	HTW
Naval Gun	St, X	1 - 7	HAW
Oil Tankers (3)	Fe, C, X, Cu	1 - 10	CSY or NSY
Pirate Ship	Fe, C, X, SAU or CS+SAU[*]	2 - 11	CSY or NSY
Power (5 units)	C or O or ⚡(pwr sqr)	0 - 0	PS
Rolling Stock (2)	2 Fe or 1 St	1 - 6	HTW
Rubber	2 O	0 - 0	RF (max. 5 Rr/turn)
Rubber Life Raft	Rr	1 - 6	CSY or NSY
Small Arms Unit	St, X	1 - 7	SAW
Steel	Fe, C	0 - 0	StM (max. 5 St/turn)

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[*] Cargo Ship + SAU = Pirate Ship; Cargo Ship takes 36 phases & $1 to arm.

	(or CM, HM, or T&D)[**]		
Submarines (2)	St, Cu, O	2 - 11	NSY
Tactical Aircraft (3)	2 Al, 2 Cu, 2 Rr, 2 O	2 - 16	AW
Tanks (3 or 1?)	2 St, X, O	1 - 11	HTW
Tool & Die	St	1 - 6	T&DW
Torpedoes (4)	X	1 - 4	SAW
Tracked Transport	X, Rr	1 - 5	LTW
Transport & Supply (3 or 1?)	Rr, 2 O, food	1 - 7	LTW
Truck	St, Rr	1 - 8	LTW

9.4   Whoopies

Name	Resources	$ - EDU	Factory
Alcoholic Beverages	3 food	1 - 6	Distillery
Automobile	St, Rr, X	1 - 12	LTW
Bicycles (2)	St, Rr	2 - 14	LTW (2 turns)
Books, Magazines	Wpx	1 - 8	AMF
Bubble Bath	O or X	1 - 6	AMF
Cigarettes, Cigars	3 food	1 - 6	LXF
Clothing	3 food	1 - 6	CGF
Cosmetics	X or O	1 - 6	LXF
Electronics	Cu, Rr, X	1 - 10	ELF
Fireworks	X	1 - 6	SAW or AMF
Furniture	△	1 - 6	CGF
Glassware	△, C	1 - 8	CGF
Hot Air Balloon	2 Rr	1 - 8	AW
Jewelry	X & (Al, Cu or Fe)	2 - 12	LXF
Light Metal Products	Fe or Al or Cu	1 - 6	Lt Metal Works
Light Transport	Al, Rr, O	1 - 10	LTW
Luxury Liner	St, 2 O, Plast	1 - 14	CSY (2 turns)
Medicine	X	1 - 6	CGF
Motorcycles (2)	St, O, Rr	2 - 16	LTW (2 turns)
Passenger Airliners (2)	Al, Cu, Rr	1 - 10	AW
Plastics	X or O	1 - 6	Plastics Factory
Rubber Bands (6000)	Rr	1 - 6	CGF

[**] LIMIT: 1 machine to St per 1 Fe & C to St

Rubbers	Rr	1 - 6	Plast. Factory
Sailplane	Wpx, Lmpx	1 - 10	AW
Soap	coolie	1 - 3	Soap Factory
Swimming Pool	△, Rr	1 - 8	BMF
Televisions	Wpx, Electronics	1 - 14	AMF
Toys	St	1 - 8	AMF
War Games	Wpx, Plastics	1 - 10	AMF
Wood Products (2)	3 △	3 - 18	CMF
Yacht	Wpx, 2 O, Plast.	2 - 18	CSY (2 turns)
Zoids	Plast	1 - 6	AMF

9.5   Self-Mobile Objects

Object:	Capacity:	Phases through terrain	
armor/mech	nothing	11	open land
		8	road or rail
		-	not in forest
		25	ice
artillery	nothing	25	open land
		50	forest
		12	road or rail
auto, (motor)bike	nothing	11	open land
		22	forest
		6	road or rail
coolie	2 objects	16	open land
		8	road or rail
		32	forest
		50	ice
light transport	4 amb/govt coolies	11	open land
		22	forest
		6	road or rail
locomotive	4 rolling stock	6	rail
truck	5 objects	11	open land
		22	forest
		6	road or rail

SEA UNITS			
battleship	1 coolie, SAC or regt.	8	sea, wide river, lake, or canal
cargo ship	5 obj. & 4 barges	8	sea, river, lake, canal
carrier	6 fighters, or 4 loaded TAC & 4 light bombs	8	sea, wide river, lake, or canal
cruiser	nothing	8	sea, wide river, lake, or canal
destroyer	nothing	8	sea, wide river, lake, or canal
fishing ship	1 coolie & 5 food	8	sea, river, lake, canal
luxury liner	1 coolie	8	sea, river, lake, canal
oil tanker	3 units oil	8	sea, river, lake, canal
pirate ship	5 objects	8	sea, river, lake, canal
rubber life raft	2 coolies	25	sea, river, lake, canal
sailboat	1 coolie	25	sea, river, lake, canal
submarine	3 torpedoes	8	sea, river, lake, canal
yacht	1 coolie	8	sea, river, lake, canal

AIR UNITS				RANGE
C-5A Galaxy	4 objects[*]	2	air	40

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[*] May not carry military except airborne regiments.

cargo plane	1 object[**]	3	air	40
combat helicopter	1 light bomb	3	air	15
fighter	nothing	1	air	20
hot air balloon	nothing	8	air	60
passenger airliner	4 amb/govt coolies	2	air	50
Spruce Goose	1 beer & 1 amb/govt coolie	3	air	30
strategic bomber	1 bomb or light bomb	1	air	30
tactical aircraft	1 light bomb	1	air	20

[**] May not carry military.

9.6   Change in Confidence Based on EDU Change (By Die Roll)

EDU Change	R O L L 2	3	4	5	6	7	8	9	10	11	12
-150	-118	-109	-101	-92	-84	-75	-67	-58	-50	-41	-33
-149	-117	-108	-100	-91	-83	-75	-66	-58	-49	-41	-32
-148	-116	-108	-99	-91	-82	-74	-66	-57	-49	-40	-32
-147	-115	-107	-99	-90	-82	-74	-65	-57	-48	-40	-32
-146	-115	-106	-98	-90	-81	-73	-65	-56	-48	-40	-32
-145	-114	-106	-97	-89	-81	-73	-64	-56	-48	-40	-31
-144	-113	-105	-97	-88	-80	-72	-64	-56	-47	-39	-31
-143	-112	-104	-96	-88	-80	-72	-63	-55	-47	-39	-31
-142	-112	-103	-95	-87	-79	-71	-63	-55	-47	-39	-31
-141	-111	-103	-95	-87	-79	-71	-62	-54	-46	-38	-30
-140	-110	-102	-94	-86	-78	-70	-62	-54	-46	-38	-30
-139	-109	-101	-93	-85	-77	-70	-62	-54	-46	-38	-30
-138	-109	-101	-93	-85	-77	-69	-61	-53	-45	-37	-30
-137	-108	-100	-92	-84	-76	-69	-61	-53	-45	-37	-29
-136	-107	-99	-91	-84	-76	-68	-60	-52	-45	-37	-29
-135	-106	-99	-91	-83	-75	-68	-60	-52	-44	-37	-29
-134	-106	-98	-90	-82	-75	-67	-59	-52	-44	-36	-29
-133	-105	-97	-89	-82	-74	-67	-59	-51	-44	-36	-28
-132	-104	-96	-89	-81	-74	-66	-58	-51	-43	-36	-28
-131	-103	-96	-88	-81	-73	-66	-58	-50	-43	-35	-28
-130	-103	-95	-88	-80	-73	-65	-58	-50	-43	-35	-28
-129	-102	-94	-87	-79	-72	-65	-57	-50	-42	-35	-27
-128	-101	-94	-86	-79	-71	-64	-57	-49	-42	-34	-27
-127	-100	-93	-86	-78	-71	-64	-56	-49	-41	-34	-27
-126	-100	-92	-85	-78	-70	-63	-56	-48	-41	-34	-27
-125	-99	-92	-84	-77	-70	-63	-55	-48	-41	-34	-26
-124	-98	-91	-84	-76	-69	-62	-55	-48	-40	-33	-26
-123	-97	-90	-83	-76	-69	-62	-54	-47	-40	-33	-26
-122	-97	-89	-82	-75	-68	-61	-54	-47	-40	-33	-26
-121	-96	-89	-82	-75	-68	-61	-53	-46	-39	-32	-25
-120	-95	-88	-81	-74	-67	-60	-53	-46	-39	-32	-25
-119	-94	-87	-80	-73	-66	-60	-53	-46	-39	-32	-25
-118	-94	-87	-80	-73	-66	-59	-52	-45	-38	-31	-25
-117	-93	-86	-79	-72	-65	-59	-52	-45	-38	-31	-24
-116	-92	-85	-78	-72	-65	-58	-51	-44	-38	-31	-24
-115	-91	-85	-78	-71	-64	-58	-51	-44	-37	-31	-24
-114	-91	-84	-77	-70	-64	-57	-50	-44	-37	-30	-24
-113	-90	-83	-76	-70	-63	-57	-50	-43	-37	-30	-23
-112	-89	-82	-76	-69	-63	-56	-49	-43	-36	-30	-23
-111	-88	-82	-75	-69	-62	-56	-49	-42	-36	-29	-23
-110	-88	-81	-75	-68	-62	-55	-49	-42	-36	-29	-23
-109	-87	-80	-74	-67	-61	-55	-48	-42	-35	-29	-22
-108	-86	-80	-73	-67	-60	-54	-48	-41	-35	-28	-22
-107	-85	-79	-73	-66	-60	-54	-47	-41	-34	-28	-22
-106	-85	-78	-72	-66	-59	-53	-47	-40	-34	-28	-22
-105	-84	-78	-71	-65	-59	-53	-46	-40	-34	-28	-21
-104	-83	-77	-71	-64	-58	-52	-46	-40	-33	-27	-21
-103	-82	-76	-70	-64	-58	-52	-45	-39	-33	-27	-21
-102	-82	-75	-69	-63	-57	-51	-45	-39	-33	-27	-21
-101	-81	-75	-69	-63	-57	-51	-44	-38	-32	-26	-20

EDU Change	R O L L										
	2	3	4	5	6	7	8	9	10	11	12
-100	-80	-74	-68	-62	-56	-50	-44	-38	-32	-26	-20
-99	-79	-73	-67	-61	-55	-50	-44	-38	-32	-26	-20
-98	-79	-73	-67	-61	-55	-49	-43	-37	-31	-25	-20
-97	-78	-72	-66	-60	-54	-49	-43	-37	-31	-25	-19
-96	-77	-71	-65	-60	-54	-48	-42	-36	-31	-25	-19
-95	-76	-71	-65	-59	-53	-48	-42	-36	-30	-25	-19
-94	-76	-70	-64	-58	-53	-47	-41	-36	-30	-24	-19
-93	-75	-69	-63	-58	-52	-47	-41	-35	-30	-24	-18
-92	-74	-68	-63	-57	-52	-46	-40	-35	-29	-24	-18
-91	-73	-68	-62	-57	-51	-46	-40	-34	-29	-23	-18
-90	-73	-67	-62	-56	-51	-45	-40	-34	-29	-23	-18
-89	-72	-66	-61	-55	-50	-45	-39	-34	-28	-23	-17
-88	-71	-66	-60	-55	-49	-44	-39	-33	-28	-22	-17
-87	-70	-65	-60	-54	-49	-44	-38	-33	-27	-22	-17
-86	-70	-64	-59	-54	-48	-43	-38	-32	-27	-22	-17
-85	-69	-64	-58	-53	-48	-43	-37	-32	-27	-22	-16
-84	-68	-63	-58	-52	-47	-42	-37	-32	-26	-21	-16
-83	-67	-62	-57	-52	-47	-42	-36	-31	-26	-21	-16
-82	-67	-61	-56	-51	-46	-41	-36	-31	-26	-21	-16
-81	-66	-61	-56	-51	-46	-41	-35	-30	-25	-20	-15
-80	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15
-79	-64	-59	-54	-49	-44	-40	-35	-30	-25	-20	-15
-78	-64	-59	-54	-49	-44	-39	-34	-29	-24	-19	-15
-77	-63	-58	-53	-48	-43	-39	-34	-29	-24	-19	-14
-76	-62	-57	-52	-48	-43	-38	-33	-28	-24	-19	-14
-75	-61	-57	-52	-47	-42	-38	-33	-28	-23	-19	-14
-74	-61	-56	-51	-46	-42	-37	-32	-28	-23	-18	-14
-73	-60	-55	-50	-46	-41	-37	-32	-27	-23	-18	-13
-72	-59	-54	-50	-45	-41	-36	-31	-27	-22	-18	-13
-71	-58	-54	-49	-45	-40	-36	-31	-26	-22	-17	-13
-70	-58	-53	-49	-44	-40	-35	-31	-26	-22	-17	-13
-69	-57	-52	-48	-43	-39	-35	-30	-26	-21	-17	-12
-68	-56	-52	-47	-43	-38	-34	-30	-25	-21	-16	-12
-67	-55	-51	-47	-42	-38	-34	-29	-25	-20	-16	-12
-66	-55	-50	-46	-42	-37	-33	-29	-24	-20	-16	-12
-65	-54	-50	-45	-41	-37	-33	-28	-24	-20	-16	-11
-64	-53	-49	-45	-40	-36	-32	-28	-24	-19	-15	-11
-63	-52	-48	-44	-40	-36	-32	-27	-23	-19	-15	-11
-62	-52	-47	-43	-39	-35	-31	-27	-23	-19	-15	-11
-61	-51	-47	-43	-39	-35	-31	-26	-22	-18	-14	-10
-60	-50	-46	-42	-38	-34	-30	-26	-22	-18	-14	-10
-59	-49	-45	-41	-37	-33	-30	-26	-22	-18	-14	-10
-58	-49	-45	-41	-37	-33	-29	-25	-21	-17	-13	-10
-57	-48	-44	-40	-36	-32	-29	-25	-21	-17	-13	-9
-56	-47	-43	-39	-36	-32	-28	-24	-20	-17	-13	-9
-55	-46	-43	-39	-35	-31	-28	-24	-20	-16	-13	-9
-54	-46	-42	-38	-34	-31	-27	-23	-20	-16	-12	-9
-53	-45	-41	-37	-34	-30	-27	-23	-19	-16	-12	-8
-52	-44	-40	-37	-33	-30	-26	-22	-19	-15	-12	-8
-51	-43	-40	-36	-33	-29	-26	-22	-18	-15	-11	-8
-50	-43	-39	-36	-32	-29	-25	-22	-18	-15	-11	-8
-49	-42	-38	-35	-31	-28	-25	-21	-18	-14	-11	-7
-48	-41	-38	-34	-31	-27	-24	-21	-17	-14	-10	-7
-47	-40	-37	-34	-30	-27	-24	-20	-17	-13	-10	-7
-46	-40	-36	-33	-30	-26	-23	-20	-16	-13	-10	-7

EDU Change	ROLL										
	2	3	4	5	6	7	8	9	10	11	12
-45	-39	-36	-32	-29	-26	-23	-19	-16	-13	-10	-6
-44	-38	-35	-32	-28	-25	-22	-19	-16	-12	-9	-6
-43	-37	-34	-31	-28	-25	-22	-18	-15	-12	-9	-6
-42	-37	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6
-41	-36	-33	-30	-27	-24	-21	-17	-14	-11	-8	-5
-40	-35	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5
-39	-34	-31	-28	-25	-22	-20	-17	-14	-11	-8	-5
-38	-34	-31	-28	-25	-22	-19	-16	-13	-10	-7	-5
-37	-33	-30	-27	-24	-21	-19	-16	-13	-10	-7	-4
-36	-32	-29	-26	-24	-21	-18	-15	-12	-10	-7	-4
-35	-31	-29	-26	-23	-20	-18	-15	-12	-9	-7	-4
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-33	-30	-27	-24	-22	-19	-17	-14	-11	-9	-6	-3
-32	-29	-26	-24	-21	-19	-16	-13	-11	-8	-6	-3
-31	-28	-26	-23	-21	-18	-16	-13	-10	-8	-5	-3
-30	-28	-25	-23	-20	-18	-15	-13	-10	-8	-5	-3
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-28	-26	-24	-21	-19	-16	-14	-12	-9	-7	-4	-2
-27	-25	-23	-21	-18	-16	-14	-11	-9	-6	-4	-2
-26	-25	-22	-20	-18	-15	-13	-11	-8	-6	-4	-2
-25	-24	-22	-19	-17	-15	-13	-10	-8	-6	-4	-1
-24	-23	-21	-19	-16	-14	-12	-10	-8	-5	-3	-1
-23	-22	-20	-18	-16	-14	-12	-9	-7	-5	-3	-1
-22	-22	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1
-21	-21	-19	-17	-15	-13	-11	-8	-6	-4	-2	-0
-20	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0
-19	-19	-17	-15	-13	-11	-10	-8	-6	-4	-2	0
-18	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1
-17	-18	-16	-14	-12	-10	-9	-7	-5	-3	-1	1
-16	-17	-15	-13	-12	-10	-8	-6	-4	-3	-1	1
-15	-16	-15	-13	-11	-9	-8	-6	-4	-2	-1	1
-14	-16	-14	-12	-10	-9	-7	-5	-4	-2	-0	2
-13	-15	-13	-11	-10	-8	-7	-5	-3	-2	0	2
-12	-14	-12	-11	-9	-8	-6	-4	-3	-1	0	2
-11	-13	-12	-10	-9	-7	-6	-4	-2	-1	1	2
-10	-13	-11	-10	-8	-7	-5	-4	-2	-1	1	3
-9	-12	-10	-9	-7	-6	-5	-3	-2	-0	1	3
-8	-11	-10	-8	-7	-5	-4	-3	-1	0	2	3
-7	-10	-9	-8	-6	-5	-4	-2	-1	1	2	3
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-5	-9	-8	-6	-5	-4	-3	-1	0	1	3	4
-4	-8	-7	-6	-4	-3	-2	-1	0	2	3	4
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2	-5	-3	-2	-1	-0	1	2	3	4	5	7
3	-4	-3	-2	-1	0	2	3	4	5	6	7
4	-4	-3	-2	-0	1	2	3	4	6	7	8
5	-4	-3	-1	0	1	3	4	5	6	8	9
6	-4	-2	-1	0	2	3	4	6	7	8	10
7	-3	-2	-1	1	2	4	5	6	8	9	10
8	-3	-2	-0	1	3	4	5	7	8	10	11
9	-3	-1	0	2	3	5	6	7	9	10	12

EDU Change	2	3	4	5	6	7	8	9	10	11	12
10	-3	-1	1	2	4	5	7	8	10	11	13
11	-2	-1	1	2	4	6	7	9	10	12	13
12	-2	-0	1	3	4	6	8	9	11	12	14
13	-2	-0	2	3	5	7	8	10	11	13	15
14	-2	0	2	4	5	7	9	10	12	14	16
15	-1	1	2	4	6	8	9	11	13	15	16
16	-1	1	3	4	6	8	10	12	13	15	17
17	-1	1	3	5	7	9	10	12	14	16	18
18	-1	1	3	5	7	9	11	13	15	17	19
19	-0	2	4	6	8	10	11	13	15	17	19
20	0	2	4	6	8	10	12	14	16	18	20
21	0	2	4	6	8	11	13	15	17	19	21
22	1	3	5	7	9	11	13	15	17	19	22
23	1	3	5	7	9	12	14	16	18	20	22
24	1	3	5	8	10	12	14	16	19	21	23
25	1	4	6	8	10	13	15	17	19	22	24
26	2	4	6	8	11	13	15	18	20	22	25
27	2	4	6	9	11	14	16	18	21	23	25
28	2	4	7	9	12	14	16	19	21	24	26
29	2	5	7	10	12	15	17	19	22	24	27
30	3	5	8	10	13	15	18	20	23	25	28
31	3	5	8	10	13	16	18	21	23	26	28
32	3	6	8	11	13	16	19	21	24	26	29
33	3	6	9	11	14	17	19	22	24	27	30
34	4	6	9	12	14	17	20	22	25	28	31
35	4	7	9	12	15	18	20	23	26	29	31
36	4	7	10	12	15	18	21	24	26	29	32
37	4	7	10	13	16	19	21	24	27	30	33
38	5	7	10	13	16	19	22	25	28	31	34
39	5	8	11	14	17	20	22	25	28	31	34
40	5	8	11	14	17	20	23	26	29	32	35
41	5	8	11	14	17	21	24	27	30	33	36
42	6	9	12	15	18	21	24	27	30	33	37
43	6	9	12	15	18	22	25	28	31	34	37
44	6	9	12	16	19	22	25	28	32	35	38
45	6	10	13	16	19	23	26	29	32	36	39
46	7	10	13	16	20	23	26	30	33	36	40
47	7	10	13	17	20	24	27	30	34	37	40
48	7	10	14	17	21	24	27	31	34	38	41
49	7	11	14	18	21	25	28	31	35	38	42
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51	8	11	15	18	22	26	29	33	36	40	43
52	8	12	15	19	22	26	30	33	37	40	44
53	8	12	16	19	23	27	30	34	37	41	45
54	9	12	16	20	23	27	31	34	38	42	46
55	9	13	16	20	24	28	31	35	39	43	46
56	9	13	17	20	24	28	32	36	39	43	47
57	9	13	17	21	25	29	32	36	40	44	48
58	10	13	17	21	25	29	33	37	41	45	49
59	10	14	18	22	26	30	33	37	41	45	49
60	10	14	18	22	26	30	34	38	42	46	50
61	10	14	18	22	26	31	35	39	43	47	51
62	11	15	19	23	27	31	35	39	43	47	52
63	11	15	19	23	27	32	36	40	44	48	52
64	11	15	19	24	28	32	36	40	45	49	53

EDU Change	2	3	4	5	6	7	8	9	10	11	12
65	11	16	20	24	28	33	37	41	45	50	54
66	12	16	20	24	29	33	37	42	46	50	55
67	12	16	20	25	29	34	38	42	47	51	55
68	12	16	21	25	30	34	38	43	47	52	56
69	12	17	21	26	30	35	39	43	48	52	57
70	13	17	22	26	31	35	40	44	49	53	58
71	13	17	22	26	31	36	40	45	49	54	58
72	13	18	22	27	31	36	41	45	50	54	59
73	13	18	23	27	32	37	41	46	50	55	60
74	14	18	23	28	32	37	42	46	51	56	61
75	14	19	23	28	33	38	42	47	52	57	61
76	14	19	24	28	33	38	43	48	52	57	62
77	14	19	24	29	34	39	43	48	53	58	63
78	15	19	24	29	34	39	44	49	54	59	64
79	15	20	25	30	35	40	44	49	54	59	64
80	15	20	25	30	35	40	45	50	55	60	65
81	15	20	25	30	35	41	46	51	56	61	66
82	16	21	26	31	36	41	46	51	56	61	67
83	16	21	26	31	36	42	47	52	57	62	67
84	16	21	26	32	37	42	47	52	58	63	68
85	16	22	27	32	37	43	48	53	58	64	69
86	17	22	27	32	38	43	48	54	59	64	70
87	17	22	27	33	38	44	49	54	60	65	70
88	17	22	28	33	39	44	49	55	60	66	71
89	17	23	28	34	39	45	50	55	61	66	72
90	18	23	29	34	40	45	51	56	62	67	73
91	18	23	29	34	40	46	51	57	62	68	73
92	18	24	29	35	40	46	52	57	63	68	74
93	18	24	30	35	41	47	52	58	63	69	75
94	19	24	30	36	41	47	53	58	64	70	76
95	19	25	30	36	42	48	53	59	65	71	76
96	19	25	31	36	42	48	54	60	65	71	77
97	19	25	31	37	43	49	54	60	66	72	78
98	20	25	31	37	43	49	55	61	67	73	79
99	20	26	32	38	44	50	55	61	67	73	79
100	20	26	32	38	44	50	56	62	68	74	80
101	20	26	32	38	44	51	57	63	69	75	81
102	21	27	33	39	45	51	57	63	69	75	82
103	21	27	33	39	45	52	58	64	70	76	82
104	21	27	33	40	46	52	58	64	71	77	83
105	21	28	34	40	46	53	59	65	71	78	84
106	22	28	34	40	47	53	59	66	72	78	85
107	22	28	34	41	47	54	60	66	73	79	85
108	22	28	35	41	48	54	60	67	73	80	86
109	22	29	35	42	48	55	61	67	74	80	87
110	23	29	36	42	49	55	62	68	75	81	88
111	23	29	36	42	49	56	62	69	75	82	88
112	23	30	36	43	49	56	63	69	76	82	89
113	23	30	37	43	50	57	63	70	76	83	90
114	24	30	37	44	50	57	64	70	77	84	91
115	24	31	37	44	51	58	64	71	78	85	91
116	24	31	38	44	51	58	65	72	78	85	92
117	24	31	38	45	52	59	65	72	79	86	93
118	25	31	38	45	52	59	66	73	80	87	94
119	25	32	39	46	53	60	66	73	80	87	94
120	25	32	39	46	53	60	67	74	81	88	95

9.7   Terrain Effects Key

Terrain	Picture	Combat Effect	Reg. Coolie cost
Clear		No Effect.	12 phases
Narrow River		Units being attacked across a river get their defense doubled.	+16 phases to cross.
Wide River		No land attack possible, except over bridge.	May only be crossed by bridge or ship.
Forest		Defense x 1.5. Armor and Mech may not enter, attack, or extend their ZOCs into forest, except on road.	24 phases
Mountain		Units attacked across mountain borders are doubled. Artillery may not fire over most mountains.	Units may only enter or cross mountains on roads, or while building roads (72 phases/border for the latter)
Desert		No Effect.	Doubles regular movement costs, except armor move on desert as if they were trucks.
Ice		No effect.	36 phases.
Water		Land units may not attack across water.	Blocks land movement. May be crossed by ship or by aircraft.
Road		No Effect. Does not negate mountain defense bonus.	6 phases, allows units to ignore forest and mountain restrictions and movement costs.

Terrain	Picture	Combat Effect	Reg. Coolie cost
Bridge		Any attack across a bridge is treated as an attack across a narrow river.	Ignore river: as per other terrain effects.
Coast		Units which attack on the same turn they landed are treated as attacking across a narrow river	No effect.
Fortress		All units on the correct side of the fortress line have their defense tripled against attacks.	No effect.
Pillbox (fortified line)		All units on the correct side of the fortress line have their defense doubled against attacks.	No effect.
Canal		As per narrow river.	As narrow river for land movement, but as wide river for naval movement.
City		No effect.	A city provides both road and rail bonuses to units entering from adjacent cities, or coming from squares with road and/or rail.
Factory		No effect.	No effect.
Pipeline/ Power Line		No effect.	No effect.
Dock/ Airport		No effect.	No effect for land units, but allows naval or air units (respectively) to dock/land.

10 OPTIONAL RULES

10.0 General

Optional rules are *not* in effect in a game, unless they are specifically stated to be in effect prior to the start of that game. They may only be introduced in mid-game by the unanimous consent of all players. The use of one optional rule does not imply the use of any others, except where specifically required or stated in the rules. Most of these rules have not been extensively tested, and many may be unbalancing to the game.

10.1 Random Events

10.1.0 General

Random events serve two purposes: they add variety to the game, and they simulate the workings of forces external to the players, whether these be the forces of nature or of the global political economy. Random events occur at the beginning of each game-turn, between player-turns. Immediately before random event determination, any delayed effects of previous random events are enacted (such as the arrival of purchased goods).

   If players wish, the random events need not happen at the beginning of each turn, but may instead happen prior to a different, randomly-determined, player-turn in each game-turn. This helps emphasize the "random" nature of the random events.

10.1.1 Random Events Table

2	Disaster
3	Sanctions
4	Arms
5	Food
6	Trade
7	Aid
8	Trade
9	Food
10	Arms
11	Sanctions
12	Disaster

10.1.2 Natural Disasters

If a natural disaster is indicated by the Random Events table, roll a die to determine disaster type: 1-4 is a flood, 5-6 an earthquake.

   Flood: Determine a random map location, then roll two dice. Any and all rivers that pass within this distance of that location are flooded along their entire length. The affected river squares are termed "flood squares." The flood lasts a full game-turn. The effect of flooding is as follows:

   narrow rivers become wide rivers; any bridges are unusable

   wide rivers become lakes; any bridges are destroyed

   farms on flood squares are unusable

   for each regular coolie in flood squares, roll a die; the coolie dies on a 6.

   Earthquake: Determine a random map location, then roll two dice. All squares within this range of the epicenter are affected. The effects are as follows:

> For each bridge, roll a die: on a 4-6 it is destroyed
>
> Non-food resource squares may not produce
>
> Anything else in the affected squares is treated as if it had been bombed

10.1.3 Diplomatic Sanctions

Diplomatic Sanctions are another possible random event. They represent political and economic pressure from off-map countries. The effect of sanctions is to reduce the possible benefits a country may receive from other random events. Determine randomly from the countries which have declared themselves hostile to one or more other countries which is to be sanctioned against. If there are no such countries, choose a country at random. The sanctions will last a number of turns equal to the roll of one die. Also roll a die to determine the severity of the sanctions:

1-3	<u>World Trade</u>: The country may not make purchases from the world trade market.
4-5	<u>Foreign Aid</u>: As above, plus the country may not receive international foreign aid.
6	<u>Arms</u>: Both of the above, plus the country may not make purchases on the international arms market.

10.1.4 International Arms Market

When this result occurs, players have an opportunity to buy weaponry. This result is ignored on the first four turns of the game. Once the available equipment is determined, the players may submit secret bids for it, of the minimum or higher. In some cases, there may be several lots of arms up for bid, in which case each bid must specify which lot it is for. A full game-turn later, the bids are compared, and the highest bidder gets the goods a full turn on his next turn after that. The goods may be delivered to any city owned by that player, but he must specify which city at the time he wins the bid. No EDU is gained for the goods purchased.

If both Random Events and Technology (10.2) are in use, then any items available via World Trade or the Arms Market are of a tech level between zero and the highest any player has in that area at that time. The exact tech level is randomly determined within these constraints.

Roll a die to determine how many lots are available: 1-3 is one, 4-5 is two, 6 is three. For each lot, cross-index the rolls of two dice to determine what it is, and the minimum bid.

Dice	1	2	3	4	5	6
1	SAU $2	T&S $1	Tracked Trans $2	6 bombs $2	3 copters $6	5 T&S $4
2	2 SAU $4	2 T&S $2	Air Trans $2	9 lt bombs $2	3 DD $5	4 TAC $8
3	2 SAU $3	3 T&S $3	2 AA Guns $2	6 torpedoes $2	3 UB $5	tank $2
4	3 SAU $5	HAU $1	3 AA Guns $3	3 fighters $5	2 CA $5	3 tanks $4
5	3 SAU $4	3 HAU $2	Naval Gun $2	2 bombers $5	CV $6	6 tanks $7
6	4 SAU $5	5 HAU $3	2 Naval Guns $3	2 TAC $4	BB $6	BB&CV $11

10.1.5 Food Production

Ignore this random event result on the first four game-turns. Otherwise, determine a random square on the map, then randomly determine one of the six compass directions. All squares on that side of the chosen square are affected, as are the chosen square and others on its row. Roll two dice to determine the nature of the altered food production.

DICE	RESULT
2	Excellent Crops: Farms produce 7
3	Good Crops: Farms produce 6
4	" "

5	Excellent Waters: Fish produce 7
6	Good Waters: Fish produce 6
7	Poor Catch: Fish produce 4
8	Lousy Catch: Fish produce 3
9	Poor Crops: Farms produce 4
10	Crop Failure: Farms produce 3
11	Drought: Farms produce 2
12	Famine: Farms produce 1

10.1.6 World Trade

This random event works just like the international arms market, except that it is only ignored for the first two game-turns. Again, roll a die to determine how many lots are available: 1-3 is one, 4-5 is two, 6 is three. For each lot, cross-index the rolls of two dice to determine what is offered, and the minimum bid.

DICE	1	2	3	4	5	6
1	4 Food $1	2 barges $3	3 C $3	3 △ $3	4 Cu $4	2 HM $4
2	10 Food $2	T&D $2	3 Fe $3	2 Rr $2	5 △$4	2 T&D $4
3	16 Food $3	HM $2	2 Oil $2	6 C $5	3 BM $4	Cargo Plane $3
4	2 oil tankers $2	truck $3	2 X $2	6 Fe $5	4 Rr $4	2 trucks $6
5	2 rolling stock $2	2 St $3	2 Cu $2	5 Oil $5	3 Bx $5	2 Cargo Ship $6
6	locomotive $3	4 St $6	2 CM $4	5 X $5	3 Al $6	C-5 Galaxy $7

10.1.7 Foreign Aid

This is not the same as Foreign Exchange. Foreign aid is a random event represents an attempt by off-board developed countries to help those less fortunate than themselves. It comes in two forms: food and money. Foreign aid arrives immediately upon being determined.

For certain choices here, the rules call for a determination of a certain fraction of the countries involved. Such fractions are rounded normally to the nearest whole number.

Roll a die for the amount of assistance given: 1-3 once, 4-5 twice, 6 three times. To determine which kind of foreign aid is given, go through the following list. As soon as conditions for aid are met, that aid is given. Once this has occurred the requisite number of times, stop.

1) Do any countries have starving coolies? If so, then food aid is given. If there are more countries needing food than there are instances of aid, roll randomly to see which ones get it. Food equal to the roll of three dice food automatically arrives in the country's capital, no matter where the starving coolies are.

2) Have any countries suffered earthquake or flood damage in the last two turns? If so, an outpouring of public sympathy results in cash donations. First priority goes to the most recent disaster, and secondly to those countries which actually suffered damage or loss of life. If there are more countries suffering damage than there are instances of aid, roll randomly to see which ones get it. Those who receive aid get a die+3 extra $ to spend. This extra money does *not* increase Popular Fund.

3) Are any countries in depressions? If so, then cash donations are given. If there are more countries in depression than there are instances of aid, roll randomly to see which ones get it. Those who get it get to roll three dice for cash. The first half (rounded down) is an outright gift, the remainder is a loan which must be repaid in 10 turns with 50% interest.

If you have run through the above priorities, and there is still foreign aid left, roll a die for each remaining instance. On a 1-3 it goes away; on a 4-6 the country with the lowest Confidence receives a die of extra $ to spend.

10.2 Technology (optional)

10.2.0 General

Technology may be increased by the expenditure of money in game play. The available technologies are listed below. All technologies start at level zero, and the maximum technology level is ten. The technology rules require percentile dice, and the use of percentile columns on the combat tables.

10.2.1 Increasing Technology

To increase one's technology in an area by one level, the player must spend money equal to the level to be obtained. This occurs during "investment" in the sequence of play. The player must then roll a total on two dice which is equal to or higher than the desired level. This roll must be witnessed, unless success is automatic. If a technology roll fails, it is possible to spend more for another roll, but rolls may not increase technology by more than one level in a turn.

10.2.2 Trading Technology

As implied above, there is a way to increase technology more quickly, and that is to acquire the technology from someone else. Technology may be sold, traded, etc. However, even through this method, technology may never increase more than two levels in a single turn. Of course, multi-turn trades may be made.

　　E.g. Italy wants the German offensive tank technology. Italy has level 1, and Germany has level 8. Germany sells Italy level 6 offensive tank tech for $8, but Italy only goes up to 3 this turn, 5 next turn, and then finally hits six the turn after.

10.2.3 Types of Technology

Technology
AA Gun (Attack)
Bomb Attack
Bomber Range
Cargo Plane / C5 Range
Copter Combat
Factory (for each type, e.g. Steel Mill is one type)
Fighter/TAC Combat
Fighter/TAC Range
Heavy Arms Combat
Naval Attack
Naval Defense
Small Arms Combat
Tank Attack
Tank Defense
Torpedo (Attack)

10.2.4 Effects of Technology

Factory technology gives a possibility of a production bonus, increasing for each level of tech with a particular factory type. The chance is (tech x #P), where tech is the tech level, and #P is the number of units of product that would normally have been produced. All rolls to check for production bonuses must be witnessed. E.g. Britain has Steel Mill technology at level 7, and has put in the requisite materials to produce 5 steel from one mill, and 3 from

another. Britain has a 35% chance of getting a bonus unit of steel from the first mill, and a 21% chance of a bonus from the other.

Attack and <u>defense</u> technology alter relevant combat rolls by 2% per technology level, when appropriate. Note that some technologies only affect attack, and some only affect defense. Tanks and naval units have attack and defense technologies which must be purchased separately. E.g. AA Gun technology only helps when the AA Guns are attacking other things. If the AA Gun was being bombed, the roll for the bomber's damage would not be altered.

<u>Range</u> technology increases aircraft range by one per technology level.

NOTES: "Small Arms" technology affects SACs and all land military units designated as regiments. "Heavy Arms" technology affects all land military units designated as brigades, except armor. "Tank" technology affects armor brigades only. "Naval" technology affects destroyers, aircraft carriers, cruisers, battleships, and Naval Gun attacks.

10.2.5 Technological Production & Records

Unfortunately, technology also involves further book-keeping. A special "Technology Record Sheet" keeps track of what technology spending the player has done, what levels have been achieved, and what turns it occurred on.

As soon as a player has a technology, he may use it in any new units he produces. However, already constructed units do not benefit from new tech. In the case of factories, factory production tech only works on new factories. Additionally, any items of a tech level higher than zero must be distinguished in some fashion from other similar items. For items which can have multiple tech levels, these are distinguished with slashes, ordered attack/defense/range.

E.g. Iraq has four armor units which have offensive tech of 3 and defensive tech of 1. She denotes them as "4 armor 3/1" in her records and on the map. As armor units do not have a range statistic, this is sufficient to quantify them.

Technology may be traded with other players, bought or sold. Trading/buying/selling technology, like cash, does not require physical contact.

10.3   Sub-squares

This optional rule is required for compatibility with previous Empire game maps.

A square may be divided by mountains, ocean, or double line rivers into two or more sub-squares. These sub-squares are treated as full squares for all purposes. The act of connecting sub-squares (with a mountain road, bridge, etc.) effectively integrates the squares into a single square or sub-square. Although one could have one city in each of two sub-squares of a square, one could not make such a construction if the sub-squares had already been united by a road or bridge. Movement between connected sub-squares costs zero phases.

[*This section needs to be integrated, expanded, and other relevant bits added back in throughout the rules. Ack!*]

10.4   Victory

For those who prefer a game with clearly defined winners and losers, here is one possible way to determine such things for Empire.

10.4.1   Ranking

Players still in the game when it ends are ranked by their relative economic strength, averaged over the last two turns of the game. A player's "economic strength" for this purpose is the sum of his Confidence, Investment, and Population (see economic rules). The player with the highest economic strength still in the game is ranked first, etc.

10.4.2 Victory Points

Players eliminated from the game are ranked in order of elimination, below players still in the game. "Victory Points" are awarded based on relative performance. This allows calculation of a player's "batting average," and

similar operations. The following table gives the number of points awarded to a player based on his final ranking in the game at the end of the last game-turn.

FINISH	5	6	7	8	9	10	11	12	13	14	15	16	FINISH
						NUMBER OF PLAYERS							
1st	10	10	10	10	10	10	10	10	10	10	10	10	1st
2nd	8	8	9	9	9	9	9	9	9	9	9	10	2nd
3rd	6	7	7	8	8	8	8	8	8	9	9	9	3rd
4th	4	5	6	6	7	7	7	8	8	8	8	8	4th
5th	2	3	4	5	6	6	6	7	7	7	7	8	5th
6th		2	3	4	4	5	5	6	6	6	7	7	6th
7th			1	3	3	4	5	5	5	6	6	6	7th
8th				1	2	3	4	4	5	5	5	6	8th
9th					1	2	3	3	4	4	5	5	9th
10th						1	2	3	3	4	4	5	10th
11th							1	2	2	3	3	4	11th
12th								1	2	2	3	3	12th
13th									1	1	2	3	13th
14th										1	1	2	14th
15th											1	1	15th
16th												1	16th

10.5   The Pirate

The Pirate may start at the end of turn 3, or later, to be played by someone not currently in the game. Introduction of The Pirate requires a neutral omniscient observer, henceforth known as "God." The Pirate starts with a super-cargo ship, a super-SAC, 10 food, a government coolie, a regular coolie, and 10 confidence.

The pirate's super-SAC: may carry two items and may remove items from a square that contains hostile coolies without waiting for the hostile coolies to die. In all other respects, the super-SAC is identical to a regular SAC.

The super-cargo ship uses 5 phases per water square and has infinite carrying capacity. The super-cargo ship and anything in it are invisible, with the exceptions noted below. In all respects other than those specifically enumerated, the Pirate's super-cargo ship is like a regular pirate ship. It has ½ naval combat factor, which it may use like a regular pirate ship to raid and/or sink cargo ships.

The super-cargo ship becomes visible when beached. Possessions of the pirate are visible when on land. Things bought by the pirate (e.g. airplanes, cargo ships) are not invisible except when stored in the super-cargo ship.

(1) The super-cargo ship becomes visible when it is on a coast or river square containing a coolie or any other self-mobile piece;

(2) It is seen by ships, submarines and airplanes in or over the same square;

(3) The pirate must announce his ship's presence if it sails through a square containing plane(s) in the air or ship(s) at sea. (Note: he must in this case also announce which square he sailed from and which square he sailed into.)

Position of the Pirate is known by God.

When the Pirate is sighted, his location is revealed only to the sighting player.

10.5 Sea Serpents

Sea serpents are generated when orbital phaser fire hits a completely empty ocean square. No more than three sea serpents are generated in any one ocean. (However, they may move into other oceans.)

Sea serpents move at random. A die is rolled to determine direction of movement—same table as wind table for sailboats. Two dice are rolled to determine distance. If sea serpent's indicated movement is impossible because of blocking terrain, it moves as far as possible, and then a new direction is determined for remaining movement. Sea serpent movement occurs during orbital phaser turn. Note: sea serpents may not move up single line rivers or canals.

In the turn on which a sea serpent is generated, it is under water in the square in which it was generated. While underwater, sea serpents are attacked in accordance with the rules for attacking underwater submarines, with one exception: adverse rolls do affect the attacker.

On the next turn, the sea serpent moves underwater. It attacks any submerged submarines in its path, and at the end of its turn it surfaces. A surfaced sea serpent behaves as a cruiser for all military purposes.

In its next turn it moves on the surface, attacking all surfaced ships in its path, and at the end of the turn it submerges.

It then moves underwater for a turn, and then goes to sleep.

Note: sleeping sea serpents are too deep to be damaged by attacks. The consumption of chemicals for military purposes on the same square or sub-square as the sea serpent awakens the serpent, who will then repeat the above sequence.

Note: Gratuitous bombing of squares containing sea serpents may awaken Godzilla, who might mistake you for Tokyo.

Note: attack rolls for sea serpents do not stop their movement.

11 FORMS

11.0 Overview

There are a number of forms which are important for record-keeping in a game of Empire. Unless specified elsewhere, all records refer to that state of affairs at the end of the player's turn:

1) Economic/Military Record
2) Turn Action Sheet
3) Had-Used-Produced
4) Trades
5) City Sheet
6) Military Locations
7) Road/Railroad/Powerline/Pipeline Locations
8) Items Not Listed Elsewhere

11.1 Economic Record

Country/Player:

Turn	Inv.	$	Tax	PF	EDU	Conf.	Roll	Food	Coolies	Pop.

Military Record

Turn	Military Units			Navy at Sea			Oil Due				X Due	Mil. Pay
	Land	Navy	Air	UB/DD	CA	CV/BB	Navy	Flts.	T&S	Total	Due	Pay

Oil Due: .03 per flight, .05 per CA at sea per turn, .025 per UB or DD at sea per turn, .20 per CV or BB at sea per turn, .02 per phase of Transport & Supply.
Chemicals Due: .20 per land attack,
Military Pay: .10 food and .10 $ per land unit per turn, cumulative,

11.2 Turn Action Sheet

Country/Player:

11.3 Had/Used/Produced

Country/Player:

Turn	Event	BM	Δ	Fe	C	St	O	X	Bx	Al	Cu	Rr	CM	HM	t&d	food
1	Had															
	Traded															
	Produced															
	Used															
2	Had															
	Traded															
	Produced															
	Used															
3	Had															
	Traded															
	Produced															
	Used															
4	Had															
	Traded															
	Produced															
	Used															
5	Had															
	Traded															
	Produced															
	Used															
6	Had															
	Traded															
	Produced															
	Used															
7	Had															
	Traded															
	Produced															
	Used															
8	Had															
	Traded															
	Produced															
	Used															
9	Had															
	Traded															
	Produced															
	Used															
10	Had															
	Traded															
	Produced															
	Used															

11.4 Trades

Country/Player:

Turn	With Who	When	Space	Items

11.4 City Sheet

Country/Player:

City Sheet # :

City Name:

Location:

Note: Use the blank lines to indicate other units/objects in the city which do not have their own dedicated rows.

Turn:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
BM																				
Δ																				
Fe																				
C																				
St																				
O																				
X																				
Bx																				
Al																				
Cu																				
Rr																				
CM																				
HM																				
T&D																				
Food																				
Coolies																				

11.6 Military Locations

Country/Player:

Turn	Location	Units	Turn	Location	Units

11.7 Road/Railroad/Powerline/Pipeline Locations

Country/Player:

Turn	½ Sp	1 Sp	Location	From	To	Notes	Turn	½ Sp	1 Sp	Location	From	To	Notes

11.8 Items Not Listed Elsewhere Locations

Country/Player:

Turn	Location(s)	Items	Turn	Location(s)	Itams