

Dune II Extended Reference Text

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DUNE: THE BATTLE FOR ARRAKIS, US/NTSC VERSION

16-BIT GAME CARTRIDGE FOR
THE SEGA GENESIS SYSTEM

EXTENDED REFERENCE TEXT

REVISION 09/27/2003

TOPICS IN ORDER OF APPEARANCE

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0. Introduction
1. Game Control
2. Audio Environment
3. Mission Passwords
4. Mission Overview
5. Battlefield
6. Spice
7. Spice Bloom
8. Radar Screen
9. Credits
10. Structures: General
11. Barracks
12. Concrete
13. Construction Yard
14. Hi-Tech
15. Outpost
16. Palace
17. Refinery
18. Repair Facility
19. Rocket Turret
20. Spice Silo
21. Starport
22. Turret
23. Vehicle Factory
24. Wall
25. Windtrap
26. Management Of Buildings
27. Upgrading Buildings
28. Units: General
29. Carryall
30. Combat Tank
31. Death Hand
32. Devastator
33. Deviator
34. Fremen
35. Frigate
36. Harvester
37. Infantry
38. MCV

TOPICS IN ALPHABETICAL ORDER

=====

- | Audio Environment (2)
- | Barracks (11)
- | Battlefield (5)
- | Capturing Buildings (51)
- | Carryall (29)
- | Cheat Codes (57)
- | Combat Tank (30)
- | Computer-Controlled Forces (53)
- | Concrete (12)
- | Construction Yard (13)
- | Credits (9)
- | Death Hand (31)
- | Devastator (32)
- | Deviator (33)
- | End Mission (56)
- | Fremen (34)
- | Frigate (35)
- | Game Control (1)
- | Glossary (58)
- | Harvester (36)
- | Hi-Tech (14)
- | Infantry (37)
- | Introduction (0)
- | MCV (38)
- | Management Of Buildings (26)
- | Management Of Units (50)
- | Missile Tank (39)
- | Mission Overview (4)
- | Mission Passwords (3)
- | Multiple-Weapon Units (52)
- | Ornithopter (40)
- | Outpost (15)
- | Palace (16)
- | Quad (41)
- | Radar Screen (8)
- | Raider Trike (42)
- | Refinery (17)
- | Repair Facility (18)
- | Rocket Turret (19)

39. Missile Tank	| Saboteur (43)
40. Ornithopter	| Sandworm (54)
41. Quad	| Sardaukar (55)
42. Raider Trike	| Siege Tank (44)
43. Saboteur	| Soldier (45)
44. Siege Tank	| Sonic Tank (46)
45. Soldier	| Spice (6)
46. Sonic Tank	| Spice Bloom (7)
47. Trike	| Spice Silo (20)
48. Trooper	| Starport (21)
49. Troopers	| Structures: General (10)
50. Management Of Units	| Trike (47)
51. Capturing Buildings	| Trooper (48)
52. Multiple-Weapon Units	| Troopers (49)
53. Computer-Controlled Forces	| Turret (22)
54. Sandworm	| Units: General (28)
55. Sardaukar	| Upgrading Buildings (27)
56. End Mission	Vehicle Factory (23)
57. Cheat Codes	Wall (24)
58. Glossary	Windtrap (25)

0. INTRODUCTION

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- o This document provides information on Dune: The Battle For Arrakis that does not explicitly appear in the manual included with the game. Many of the facts and tips found here will already be known to anyone who has played before; However, this document explores a wide variety of topics in detail, and should reveal useful information to novice and experienced players alike.
- o A Sega Genesis System Console, model 1601, equipped with one standard Sega Genesis "3-button" controller (model 1650) was used as the basis for the controller descriptions and real-time measurements in this document.
- o Note that prior to and during its release, this Sega game was widely referred to as "Dune II" or "Dune II: The Battle For Arrakis". This document uses the name that is used in the game itself and the manual included with the game.
- o This document is 79 characters wide, and is best viewed in a monospaced font. The master HTML version is located here: <http://Ledmeister.com/dunexref.htm>
The master text version is located here: <http://Ledmeister.com/dunexref.txt>

1. GAME CONTROL

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- o The game will only recognize a controller hooked to the first/left controller port. The other controller port is ignored.
- o In this document, the term "clicking on" refers to placement of the Selection Cursor (or Targeting Cursor) over a building, ground unit, etc. during game play, and pressing the A button once.
- o When the game's main menu appears, the player has 30 seconds to select an option before the tutorial automatically begins.
- o The Start button can be used to choose options from the main menu.
- o While the tutorial is running, instructional steps will advance automatically every few seconds, or whenever the player presses the A, B or C button.

- o Without input from the player, the tutorial will last 9 minutes from start to finish. When the tutorial is finished, the main menu reappears.
- o When Mentats speak, text passages will advance automatically every few seconds, or whenever the player presses the A, B or C button.
- o On the Options Screen, the selection arrow will "wrap" vertically when moved beyond the top or bottom of the list of choices.
- o On the Password Screen, the letter-selection cursor can be moved vertically between adjacent lines of the alphabet field. The cursor will also "wrap" when moved beyond the left or right edge of the alphabet, jumping between J and K, T and U, END and A. Password Screen alphabet field:

```
A B C D E F G H I J
K L M N O P Q R S T
U V W X Y Z < > END
```

- o On the Password Screen, when the last letter of a password has been selected, the cursor will automatically be placed at END.
- o During game play, the Options Screen can only be accessed from the Game Screen.
- o A game in progress is paused whenever the Game Screen is not displayed. If MUSIC IS ON, music will play continuously unless the player enters the Options Screen.
- o Game Time (time elapsing within the game environment) generally slows down with an increase in units on the battlefield, speeds up with a decrease in units, and is suspended whenever the Game Screen is not displayed. Game Time may also slow down when units on the battlefield experience difficulty in carrying out orders.
- o Clicking on a revealed/detected Computer-controlled ground unit or building will display its ID icon and damage status bar. Secondary status bars, such as spice levels or windtrap power levels, are not displayed for Computer buildings, but are displayed for Computer-controlled harvesters.
- o A Computer ground unit or structure which is located completely within an unrevealed/undetected area will not display an ID icon or status bar when clicked on with the Selection Cursor.
- o As a revealed/detected Computer-controlled ground unit is targeted for attack, it will flicker briefly.
- o If several ground units (friendly and/or enemy) are in a horizontal row on the Game Screen, some or all of those units may flicker.
- o When a building explodes, the Game Screen will shake. While this is happening, the control pad will be unresponsive.
- o When selecting units, any unit under or near the Selection Cursor can be selected. If there is no unit directly under the cursor, any unit immediately adjacent to the cursor's location may be selected. Cursor scanning range:

```
###
###
###
```

Notes: A "#" represents an area equal in size and shape to 1 quadrant of a concrete slab (the largest area that a single unit can occupy). Here, the actual cursor would be at the center of this 3x3 matrix.

- o Units within a Selection Cursor's scan range are chosen in the following priority:

647

213

958

Notes: A unit directly under the cursor (position 1) will be selected first. If there is no unit directly under the cursor, then the unit immediately to the left of the cursor (position 2) is selected, and so on.

- o On the Game Screen, a cursor (or a new structure's placement grid) can be moved at 3 different speeds: low, medium and high. When using only the D button (the "directional pad" on the left side of the controller), the cursor will always move at low speed. This default speed changes to medium whenever the C button is held down. High speed is reached automatically if the C and D buttons both remain down for about a second while the cursor is moving.
- o When a revealed/detected ground unit is clicked on, it is highlighted with a white or red flashing indicator. A white indicator means that the selected unit is awaiting an order from the player; A red indicator means the selected unit will not accept orders from the player.
- o If a revealed/detected Computer-controlled ground unit or sandworm is clicked on, its ID icon and damage status bar will be displayed. If that unit or sandworm then moves into unrevealed/undetected territory, its icon and damage status bar will disappear.
- o Individual enemy buildings may be targeted for attack, whether or not they are visible to the attacker. A player can use the Targeting Cursor to click on enemy buildings, even if they are in unrevealed/undetected areas of the battlefield.
- o A player may place a structure at a site which is being overflowed by friendly or enemy airborne units. Neither the structure or the airborne unit(s) will be affected.
- o On the Game Screen, pressing the B button, or clicking on empty terrain with the Selection Cursor will cancel any currently-displayed unit or sandworm ID icon and status bar. These will be replaced with the last friendly-structure icon(s) displayed.
- o On the Game Screen, issuing an order to a player unit will cancel any currently-displayed Computer-building ID icon. This will be replaced with the last player structure icon(s) displayed.
- o On the Options Screen, picking a new House will always restart the game at mission 1, even when re-selecting the current House.
- o After a new structure's placement grid appears on the Game Screen, pressing the B button will swap the placement grid with the Selection Cursor. At this point there are two possible ways to bring back the structure's placement grid: 1) Clicking again on the originating construction yard, or 2) clicking on any visible Computer-controlled building and pressing B.

- o When a new structure's placement grid appears on the Game Screen, and is then swapped for the Selection Cursor by pressing the B button, any ID and Command Window icons will disappear from the right side of the Game Screen.
- o If a friendly structure is selected on the Game Screen, and is then destroyed, any ID and Command Window icons will disappear from the right side of the Game Screen.
- o Time elapsing while the game is paused is not applied to the "TIME" value on the score screen at the end of a mission.

2. AUDIO ENVIRONMENT

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- o If SOUNDS ARE ON, selecting END on the Password Screen will play a soundbite. For a valid password the ACKNOWLEDGED or YES SIR soundbite is played; for an invalid password the INVALID SELECT or SCREAM soundbite is played.
- o During game play, sound effects may overlap or override one another. Because of this, verbal warnings, sandworm attacks and other sounds may not always be heard.
- o The CONST. COMPLETE soundbite is frequently played a few moments before the structure or unit produced is actually available.
- o During a mission, the SCREAM soundbite is only played when a soldier, infantry, trooper(s) or Fremmen unit is completely destroyed by weapon fire or an explosion.
- o If a trooper(s) or Fremmen unit attacks a building with rockets, there will usually be an explosion soundbite played as the rocket strikes. This sound is suppressed if the rocket strikes the building in an area which is on fire.
- o After exiting the Options Screen, the MUSIC TEST and SOUND TEST selections are both reset to their defaults (CYRILS COUNCIL for the music test, TARGET for the sound test).
- o A game in progress is paused whenever the Game Screen is not displayed. If MUSIC IS ON, music will play continuously unless the player enters the Options Screen.
- o On the Options Screen, "MUSIC IS ON" will mean that various tunes will play during the game. The tunes are selected at random from 5 possibilities. Each time a player enters and then exits the Options Screen while MUSIC IS ON, a new tune is chosen at random. Note that the same tune will never be played twice in a row.
- o The CONST. COMPLETE soundbite is not played when soldier, infantry, or trooper(s) units are produced.
- o There is no sound effect played when a Devastator explodes as a result of self-destructing.
- o Units will not take action on an order until the order is completed (the ACKNOWLEDGE or MOVING OUT soundbite is played if SOUNDS ARE ON).
- o Death Hand missiles are generally inaccurate. As such, a Death Hand launched at a target near an edge of the battlefield can explode partially or completely off-screen. When a Death Hand explodes completely off-screen, no explosion soundbite is played.

- o Following successful completion of mission 9, a brief ending sequence shows Arrakis from space, its color changing to the victor's House color (this is where the PLANET SHIMMER soundbite is used). Following this are the game credits. If MUSIC IS ON, the credits are accompanied by a musical score that includes sound effects from the game.

3. MISSION PASSWORDS

- o Passwords to start missions 2 through 9 for each House:

Mission	Atreides	Ordos	Harkonnen
...1...	.....	.....	.....
...2...	.DIPLOMATIC.	.DOMINATION.	.DEMOLITION
...3...	.SPICEDANCE.	.SPICESABRE.	.SPICESATYR
...4...	.ETERNALSUN.	.ARRAKISSUN.	.BURNINGSUN
...5...	.DEFTHUNTER.	.COLDHUNTER.	.DARKHUNTER
...6...	.FAIRMENTAT.	.WILYMENTAT.	.EVILMENTAT
...7...	.ASHLIKENNY.	.SLYMELANIE.	.ITSJOEBWAN
...8...	.SONICBLAST.	.STEALTHWAR.	.DEVASTATOR
...9...	.DUNERUNNER.	.POWERCrush.	.DEATHRULER

Notes: There are no passwords to start on mission 1. To switch to mission 1 from any other mission (without resetting or restarting the system), enter the Options Screen, select PICK ANOTHER HOUSE, and choose the House to start a new game with.

4. MISSION OVERVIEW

- o Detail of objectives/enemy targets in each mission:

Mission	Atreides Missions	Ordos Missions	Harkonnen Missions
...1...	.\$1,000, Ordos units..	.\$1,000, Harkonnen units.	.\$1,000, Atreides units
...2...	.\$2,700, Ordos base...	.\$2,700, Harkonnen base..	.\$2,700, Atreides base.
...3...	Harkonnen base.....	Atreides base.....	Ordos base.....
...4...	Harkonnen base.....	Atreides base.....	Ordos base.....
...5...	Ordos base.....	2 Harkonnen bases.....	Atreides base.....
...6...	Harkonnen base.....	2 Atreides bases.....	2 Ordos bases.....
...7...	2 Ordos bases.....	2 Harkonnen bases.....	2 Atreides bases.....
...8...	Ordos/Harkonnen bases	Atreides/Harkonnen bases	Atreides/Ordos bases..
...9...	2 Sardaukar bases....	2 Sardaukar bases.....	2 Sardaukar bases.....

Notes: The spice/credit quotas in missions 1 and 2 refer only to the total amount of spice in storage at any given moment (credits from harvested spice which are spent on production do not count towards fulfilling a spice quota). For the player to win mission 1, the spice quota objective must be attained. In mission 2, either the spice quota must be met, or the enemy base must be defeated to achieve a player victory. In missions 3 through 9, each enemy base on the battlefield must be defeated. Note that in all versions of mission 8, there is one base for each of the two enemy Houses indicated.

- o Only a player-controlled House can achieve victory by meeting a spice quota objective. (Computer-controlled forces can only achieve victory in any mission by defeating player-controlled bases.)
- o Number and type of units available at the start of each mission:

UNIT	1:2:3:4:5:6:7:8:9	1:2:3:4:5:6:7:8:9	1:2:3:4:5:6:7:8:9
Combat tank...	.....3:3:2:..	.....4:3:2:2:1	.....3:3:2:1:1.
Devastator...	.....	.....	.....1:2.
Deviator.....	.....	.....2:2	.....
Infantry.....	1:1:1:3:1:.....	1:2:1:1:.....	.....
Missile tank..	.....2:1:2:2	.....	.....1:1:2:2.
Quad.....	1:2:4:3:3:2:1:..	.....2:3:3:2:..1	2:4:4:4:3:3:1:.....
Raider trike..	.....	2:4:4:3:.....	.....
Siege tank...	.....2:2:2	.....2:2:3	.....2:2:1.
Soldier.....	2:2:3:..1:.....	2:2:2:.....	.....
Sonic tank...	.....2:2	.....	.....
Trike.....	2:3:2:2:.....	.....	.....
Trooper.....	.....	1:.....	3:3:3:3:.....
Troopers.....	.....	1:..1:1:2:1:..	.....2:..1:..
UNITS/MISSION	.....	.....	.....
Vehicle units	2:4:4:6:6:8:7:7:6	2:4:4:5:7:6:6:6:7	2:4:4:4:6:7:6:6:6.
All others...	3:3:4:3:2:0:0:0:0	3:5:4:2:1:2:1:0:0	3:3:3:3:2:0:1:0:0.
Total units..	5:7:8:9:8:8:7:7:6	5:9:8:7:8:8:7:6:7	5:7:7:7:8:7:7:6:6.

Notes: Houses indicated are player-controlled Houses, only.

5. BATTLEFIELD

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- o In this document, the term "battlefield" refers to the entire combat area available in a given mission, including both terrain and airspace. (The Game Screen shows a rectangular section of the battlefield, 10 spaces horizontally by 7 spaces vertically.)
- o Initial battlefield terrain features, location of the player's construction yard, location of Computer-controlled structures, starting locations of player and Computer units, and starting locations of sandworms are all unvarying each time a given mission is started.
- o Structure area displaced by mountains:

Small mountains	Single large mountain	Overlapping pair of large mountains
##	### or ###	###
##	### ###	###
	## ##	###

Notes: A "#" represents an area equal in size and shape to 1 quadrant of a concrete slab. For example, a small mountain displaces exactly as much structure space as a construction yard or windtrap, while an overlapped pair of large mountains consumes as much structure space as a starport or palace. Note that two types of small mountains appear in the game. Both consume an equal amount of structure space. Although there is only one type of single large mountain, it consumes an area of structure space which may be configured in one of two possible ways, as shown above.

- o Sand dunes will not slow the movement of ground units any more than flat sand will.

6. SPICE

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- o There is a fixed amount of spice in each mission, and a fixed number of spice blooms in missions that include them.
- o Spice on sand appears in single and double layers. Harvesters process all spice at one fixed speed, one layer at a time.
- o Spice fields can be damaged by cannon fire, rocket impacts, and most missile impacts, on either the spice itself, on units above the spice, or on sandworms under the spice. A self-destructing Devastator will also damage or destroy any spice layers under or adjacent to it.
- o Spice fields cannot be directly damaged by rifle fire, machinegun fire, Deviator missile impacts, sonic blasts, or sandworm activity.

7. SPICE BLOOM

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- o A spice bloom is the only terrain feature that can be directly targeted for attack by most ground units. (Only a Devastator can directly "target" any other type of accessible terrain, by moving over it and self-destructing.)
- o When a spice bloom is touched by any ground vehicle or solid projectile, it detonates, producing a spice field. This field will be composed of a single layer of spice around a double-layer spot at the point of detonation.
- o Spice produced by a spice bloom will not be deposited on sand dunes, on rock, or over any spice already on the sand near the bloom.
- o Spice can appear underneath any units which are on the sand near a detonating spice bloom. Note that a harvester in Guard mode on empty sand will not automatically begin harvesting if spice appears underneath it.
- o A unit which is ordered to fire on a spice bloom will fire one salvo at the bloom, and then go into Guard mode. This remains true even if the unit's projectiles miss or otherwise have no effect on the bloom.
- o A spice bloom will not be affected by sonic blasts.
- o Only missiles, rockets and sonic blasts can be fired across a spice bloom; All other solid projectiles will strike an intervening spice bloom. For example, a troopers unit firing rockets at a sonic tank would not disturb a spice bloom located directly between the two units. Likewise, if the sonic tank returned fire, the bloom would remain unaffected. By contrast, if two opposing quads attack one another, and there is a spice bloom directly between them, the first one that fires will hit the bloom, detonating it.
- o If a unit is ordered to fire on a spice bloom, but the bloom is detonated before the unit can execute the order, the unit will still attempt to comply, moving (if necessary) to within firing range, and then firing once at the spot where the bloom existed. The unit will then go into Guard mode.
- o Sandworms can move under/through spice blooms without triggering them.
- o If a spice bloom is detonated while a sandworm is occupying the same space, the worm is destroyed.
- o Revealed/detected spice blooms will appear as dark dots on the radar screen.

- o Spice blooms are not present in all missions.

8. RADAR SCREEN

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- o Unless otherwise specified, all references to the radar screen assume that the radar screen is on and is supported by a fully-powered outpost.
- o Without an outpost and/or sufficient power, the radar screen will only show friendly buildings.
- o On the radar screen, revealed/detected rock is a darker shade of the color used for sand.
- o Revealed/detected mountains and spice blooms will appear as dark dots on the radar screen.
- o On the radar screen, a revealed/detected building appears as a rectangle in the House color of the side which controls it.
- o Revealed/detected ground units appear as dots on radar. These will be in the House color of the side which controls them.
- o On the Game Screen, a deviated unit's coloring will change to the House color of the side controlling the Deviator. If the deviation effect wears off, the unit's color changes back. The radar screen will also show the color changes of deviated ground units.
- o Airborne units and Death Hands do not appear on radar.
- o If a Computer-controlled unit, turret or rocket turret fires from a position which is not visible on the battlefield, that position and the area around it will be revealed/detected.
- o If an ornithopter fires from an unrevealed/undetected position on the battlefield, that position and the area around it will be revealed/detected.
- o Player carryalls may, from time to time, drop off new reinforcement units. If a player unit is dropped off in an unrevealed/undetected location on the battlefield, the unit and the area around it will be revealed/detected.
- o When an Atreides palace successfully summons a Fremen attack, a group of Fremen units will appear at a random point on the battlefield. If these units appear in a location that is unrevealed/undetected on the battlefield, the units and the immediate area around them will be revealed/detected.
- o On the radar screen, revealed/detected Fremen units and sandworm mounds will appear as white dots.
- o Airborne units do not reveal unexplored territory.
- o Sand dunes and craters do not appear on radar.
- o Concrete and walls do not appear on radar.
- o The radar screen will not inhibit or interfere with cursor movement or the ability to select or target a unit or building located under/behind the radar screen.
- o The radar screen itself remains a fixed size in all missions. However the battlefield varies in size from mission to mission, so all objects shown on

the radar screen will be scaled accordingly.

- o The edge of the radar screen itself will be in the player's House color.
- o As a revealed/detected ground unit moves across the battlefield, a small dot representing the unit will move across the equivalent path on the radar screen. While this is happening, there may be a time lag during updating of the radar screen, causing a dot to momentarily remain in the unit's old position while a new dot appears in the unit's new position. This effect may give the impression that more units are on the battlefield than actually exist.

9. CREDITS

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- o A "credit" is a monetary unit of measure, where 1 credit represents the smallest physical amount of harvested/stored spice which is considered to have any real value. In general, a credit level directly represents the total amount of spice held in a House's storage facilities (refineries and/or silos). For example, a House with "500 credits" available will usually have a combined total of 500 credits' worth of spice stored in one or more friendly storage facilities.
- o There are three occasions where a player's spice/credit level can exceed the normal spice storage capacity of friendly refineries and silos: 1) At the start of each mission, when a player has a construction yard and a number of credits, but no spice storage facility; 2) When a player's last/only storage facility is destroyed, but some credits remain available, and 3) When a cheat code is used to raise the combined storage capacity of existing facilities beyond normal limits.
- o If a player's last/only spice storage facility is destroyed, the player's spice/credit level will drop severely; but a very small percentage of the destroyed spice may be retained. This spice may be returned to storage if another facility becomes available.
- o If a construction, upgrade, or repair project is cancelled, credits invested in that project will be returned, and reconverted to spice. If all friendly storage facilities are full when the project is cancelled, the returned spice/credits will be lost.
- o A Computer-controlled House may still be able to expend credits after all its refineries and silos are captured or destroyed.
- o The parameters on credit usage are somewhat flexible. For example, structures and units can occasionally be produced at a cost which is slightly below the documented price.
- o A player's spice/credit status is subject to entropy. As a game progresses, spice/credits will disappear intermittently, at a rate which can vary from game to game. If any game is left unplayed (and unpaused) long enough, a player's credit level will eventually dwindle down to a single credit.
- o If all available spice has been harvested, a player may still be able to earn credits. Each time a carryall delivers a replacement harvester to a player's refinery, the player's House gains 6 to 7 credits. Note, however, that these extra credits may quickly disappear again unless they are being invested in a current construction, upgrade, or repair project.
- o When a player's credit level drops below 50, a "CREDITS LOW" warning message is displayed.

- o When a player's credit level drops below 20, it may be impossible to spend the remaining credits before the level is increased.
- o A player's last credit can only be spent on a unit purchased at a starport (otherwise, a player will always have at least 1 credit).
- o When a player House's credit level is too low, all construction, upgrades and unit repairs at friendly buildings will be suspended, and may resume when more credits are available (note that any paused construction projects will resume before any paused upgrade projects). When player credits are too low, any structural repairs underway at player buildings will stop, and will not resume when more credits are available.
- o Spice collection and processing may continue even after all refineries and silos are full. No credits are gained from the processing of excess spice, and the excess spice itself is lost (although the excess spice is counted in scoring after the mission ends).
- o A player's House will not gain spice/credits by capturing Computer-controlled refineries or silos.
- o The game will not keep track of harvested spice beyond 65,000 credits.
- o Maximum starting credits for each mission:

Mission	Atreides	Ordos	Harkonnen
...1....	...990...	...990.	...990...
...2....	..1,200...	..1,200.	..1,200...
...3....	..1,500...	..1,500.	..1,500...
...4....	..1,500...	..1,500.	..1,500...
...5....	..1,500...	..1,500.	..1,500...
...6....	..1,700...	..1,700.	..1,700...
...7....	..2,000...	..2,000.	..1,800...
...8....	..2,000...	..2,000.	..2,000...
...9....	..2,500...	..2,000.	..2,500...

Notes: Houses indicated are player-controlled Houses, only.

10. STRUCTURES: GENERAL

- o The term "structure" in this document refers to any construction yard, and to anything that can be produced by a construction yard. The term "building" (as a noun) in this document refers to any structure, excluding concrete slabs and wall sections.
- o When a building is placed, there is a moment where the graphics will flicker, alternating between showing a completed building, and an interim stage. Even before the image finalizes, the building may be selected, fixed, targeted, etc.
- o As a player structure is placed on the battlefield, any unrevealed/undetected terrain at the construction site will be revealed/detected.
- o Buildings not placed fully on concrete will start off with damage. The less rock there is directly under a building when it is placed, the less damage the building will start with. A formula to determine starting damage:

$$50 - ((50 / \text{Squares in placement grid}) * \text{Number of squares over concrete})$$

Notes: "*" indicates multiplication. The number returned is damage sustained by the building as a percentage, where 0% would mean the building is undamaged. Example: Placing a windtrap (2x2=4 squares in its placement grid) on only 1 square of concrete means the windtrap will start off with 37.5% damage, as $50 - ((50/4) * 1) = 37.5$. Any building placed completely on rock will be 50% damaged.

- o If a barracks, construction yard, Hi-Tech, refinery, repair facility, vehicle factory or windtrap is damaged, its performance may suffer. The more damage done to one of these buildings, the more inefficient it will become. With windtraps, this decline in performance means a lower energy output; with all other buildings, a decline in performance means that they will function more slowly: Barracks, Hi-Techs and vehicle factories will take longer to produce units; construction yards take longer to produce structures; refineries take longer to unload harvesters/refine spice; and repair facilities take longer to fix damaged units (undamaged units are always released quickly).
- o Damaged buildings draw as much power from windtraps as undamaged buildings of the same type.
- o Three different symbols can appear at the center of player buildings under varying circumstances: 1) The "OK" symbol, which appears at a construction yard or palace which is awaiting further orders, 2) the lightning-bolt symbol, which appears at windtraps when they fail to meet energy demands, and 3) the hammer symbol, which appears at buildings under repair. (Note that when more than one symbol is displayed at the same building, the "OK" symbol will overlay a hammer symbol; a hammer symbol will overlay a lightning-bolt symbol.)
- o When a building explodes, any buildings, walls or units immediately adjacent horizontally or vertically may be damaged.
- o In each mission there is a limit on the combined number of player and Computer buildings that may exist at one time. (From 68 to 70 buildings are usually allowed, but this can vary slightly from mission to mission.) Once this limit is reached, only concrete slabs and wall sections (if available) may be constructed unless/until an existing building (friendly or enemy) is destroyed. In this way, when the mission's building limit is reached, an attacker may destroy a defender's building, and then construct a new one for the attacking side, preventing the defender from replacing the destroyed building.
- o Many buildings have a rotating light beacon near their southeast corner. A beacon's color will be the House color of the side controlling that building.
- o If fire and smoke plumes appear over a building, it has been attacked and is at least 50% damaged.
- o When a building is destroyed, any unit located at the building (such as a harvester or a unit being repaired) is also destroyed, along with any cargo held by that unit. Any unit located above an exploding building (such as a carryall or ornithopter) may also be destroyed, along with any cargo held by that unit. If the building was constructing a structure or a unit at the time, the credits spent on that construction are returned. If the building was repairing a unit at the time, the credits spent on that repair are returned. If the building was being fixed or upgraded at the time, credits already spent are not returned.
- o Ground combat units can be ordered to fire upon all friendly structures

except repair facilities and concrete.

- o A player cannot place structures on top of a Computer House's concrete or other Computer structures. A player can place a structure adjacent to Computer concrete, buildings, walls, or on top of areas of damage where they had existed, provided that the structure being placed is also adjacent to player concrete, buildings or walls (or the structure being placed is a construction yard produced by an MCV).
- o Any units attacking or moving towards a building will stop attacking or moving towards it if the building is captured by a friendly soldier, infantry or trooper(s) unit.
- o Turrets and rocket turrets in Guard mode will occasionally "fidget", rotating slightly at random times.
- o Units may be damaged if they are directly adjacent to (or overflying) an area of a structure, a unit or a mountain which is being struck by weapon fire.
- o After a building is successfully upgraded, its default Build option (shown on the Game Screen when the building is initially clicked on) will change to the option which is now available as a result of the upgrade.
- o Highlighting STOP on a building's Production Screen will display an image of the last thing produced at that building, or the last available option on the production menu.
- o While a building is being upgraded, a Fix order can also be issued to the building. A player can issue a Fix order to an upgrading building even when there are no credits available to make the repairs. (When this happens, the hammer symbol will continue to flash over the building until enough credits become available to complete repairs, or until the Fix order is cancelled.)
- o Structure list, alphabetical sort:

Structure	Cost	Power	Shield	Size	Prerequisite building(s)	First mission
Barracks (soldier)	300.	-10.	..600.	2x2.	Outpost	...2...
Barracks (trooper)	400.	-20.	..800.	2x2.	Outpost	...2...
Concrete slab	.15.	...0.	...40.	2x2.	Construction yard	...1...
Construction yard	N/A.	...0.	..800.	2x2.	None	...1...
Hi-Tech	500.	-35.	1,000.	2x2.	Outpost and factory	...5...
Outpost	400.	-30.	1,000.	2x2.	Windtrap	...2...
Palace	999.	-80.	2,000.	3x3.	Starport	...8...
Refinery	400.	-30.	..900.	3x2.	Windtrap	...1...
Repair facility	700.	-20.	1,800.	3x2.	Outpost and factory	...5...
Rocket turret	250.	-20.	..500.	1x1.	Outpost	...6...
Spice silo	150.	..-5.	..300.	2x2.	Refinery	...2...
Starport	500.	-50.	1,000.	3x3.	Refinery	...6...
Turret	125.	-10.	..250.	1x1.	Outpost	...5...
Vehicle factory, Atreides	400.	-20.	..800.	3x2.	Refinery	...2...
Vehicle factory, Harkonnen	400.	-20.	..800.	3x2.	Refinery	...3...
Vehicle factory, Ordos	400.	-20.	..800.	3x2.	Refinery	...2...
Wall section	.50.	...0.	..140.	1x1.	Outpost	...4...
Windtrap	300.	100.	..400.	2x2.	Construction yard	...1...

Notes: "Size" is measured as horizontal spaces by vertical spaces, where 1 space is equal in size and shape to 1 quadrant of a full-sized concrete slab. "N/A" means "Not Applicable"; The term "factory" here means vehicle factory.

The cost of a construction yard varies from mission to mission. (A player's initial construction yard costs nothing, but additional construction yards can be produced through the use of MCVs, which in turn cost a variable amount to produce, depending both on the mission number, and whether the MCV was built at a vehicle factory or purchased at a starport.)

o Structure list, cost sort:

Structure	Cost	Power	Shield	Size	Prerequisite building(s)	First mission
Construction yard.....	N/A.	...0.	..800.	|2x2.	None.....	...1...
Concrete slab.....	.15.	...0.	..40.	|2x2.	Construction yard..	...1...
Wall section.....	.50.	...0.	..140.	|1x1.	Outpost.....	...4...
Turret.....	|125.	|-10.	..250.	|1x1.	Outpost.....	...5...
Spice silo.....	|150.	|-5.	..300.	|2x2.	Refinery.....	...2...
Rocket turret.....	|250.	|-20.	..500.	|1x1.	Outpost.....	...6...
Barracks (soldier).....	|300.	|-10.	..600.	|2x2.	Outpost.....	...2...
Windtrap.....	|300.	|.100.	..400.	|2x2.	Construction yard..	...1...
Barracks (trooper).....	|400.	|-20.	..800.	|2x2.	Outpost.....	...2...
Outpost.....	|400.	|-30.	|1,000.	|2x2.	Windtrap.....	...2...
Refinery.....	|400.	|-30.	..900.	|3x2.	Windtrap.....	...1...
Vehicle factory, Atreides.	|400.	|-20.	..800.	|3x2.	Refinery.....	...2...
Vehicle factory, Harkonnen	|400.	|-20.	..800.	|3x2.	Refinery.....	...3...
Vehicle factory, Ordos....	|400.	|-20.	..800.	|3x2.	Refinery.....	...2...
Hi-Tech.....	|500.	|-35.	|1,000.	|2x2.	Outpost and factory	...5...
Starport.....	|500.	|-50.	|1,000.	|3x3.	Refinery.....	...6...
Repair facility.....	|700.	|-20.	|1,800.	|3x2.	Outpost and factory	...5...
Palace.....	|999.	|-80.	|2,000.	|3x3.	Starport.....	...8...

Notes: See the notes with the first chart in this series.

o Structure list, power sort:

Structure	Power	Cost	Shield	Size	Prerequisite building(s)	First mission
Windtrap.....	.100.	|300.	..400.	|2x2.	Construction yard..	...1...
Concrete slab.....	...0.	.15.	..40.	|2x2.	Construction yard..	...1...
Construction yard.....	...0.	|N/A.	..800.	|2x2.	None.....	...1...
Wall section.....	...0.	.50.	..140.	|1x1.	Outpost.....	...4...
Spice silo.....	|-5.	|150.	..300.	|2x2.	Refinery.....	...2...
Barracks (soldier).....	|-10.	|300.	..600.	|2x2.	Outpost.....	...2...
Turret.....	|-10.	|125.	..250.	|1x1.	Outpost.....	...5...
Barracks (trooper).....	|-20.	|400.	..800.	|2x2.	Outpost.....	...2...
Repair facility.....	|-20.	|700.	|1,800.	|3x2.	Outpost and factory	...5...
Rocket turret.....	|-20.	|250.	..500.	|1x1.	Outpost.....	...6...
Vehicle factory, Atreides.	|-20.	|400.	..800.	|3x2.	Refinery.....	...2...
Vehicle factory, Harkonnen	|-20.	|400.	..800.	|3x2.	Refinery.....	...3...
Vehicle factory, Ordos....	|-20.	|400.	..800.	|3x2.	Refinery.....	...2...
Outpost.....	|-30.	|400.	|1,000.	|2x2.	Windtrap.....	...2...
Refinery.....	|-30.	|400.	..900.	|3x2.	Windtrap.....	...1...
Hi-Tech.....	|-35.	|500.	|1,000.	|2x2.	Outpost and factory	...5...
Starport.....	|-50.	|500.	|1,000.	|3x3.	Refinery.....	...6...
Palace.....	|-80.	|999.	|2,000.	|3x3.	Starport.....	...8...

Notes: See the notes with the first chart in this series.

o Structure list, shield sort:

Structure	Shield	Cost	Power	Size	Prerequisite building(s)	First mission
Concrete slab.....	..40.	..15.	...0.	2x2.	Construction yard..	...1...
Wall section.....	..140.	..50.	...0.	1x1.	Outpost.....	...4...
Turret.....	..250.	125.	.-10.	1x1.	Outpost.....	...5...
Spice silo.....	..300.	150.	..-5.	2x2.	Refinery.....	...2...
Windtrap.....	..400.	300.	..100.	2x2.	Construction yard..	...1...
Rocket turret.....	..500.	250.	.-20.	1x1.	Outpost.....	...6...
Barracks (soldier).....	..600.	300.	.-10.	2x2.	Outpost.....	...2...
Barracks (trooper).....	..800.	400.	.-20.	2x2.	Outpost.....	...2...
Construction yard.....	..800.	N/A.	...0.	2x2.	None.....	...1...
Vehicle factory, Atreides..	..800.	400.	.-20.	3x2.	Refinery.....	...2...
Vehicle factory, Harkonnen|	..800.	400.	.-20.	3x2.	Refinery.....	...3...
Vehicle factory, Ordos....	..800.	400.	.-20.	3x2.	Refinery.....	...2...
Refinery.....	..900.	400.	.-30.	3x2.	Windtrap.....	...1...
Hi-Tech.....	1,000.	500.	.-35.	2x2.	Outpost and factory|	...5...
Outpost.....	1,000.	400.	.-30.	2x2.	Windtrap.....	...2...
Starport.....	1,000.	500.	.-50.	3x3.	Refinery.....	...6...
Repair facility.....	1,800.	700.	.-20.	3x2.	Outpost and factory|	...5...
Palace.....	2,000.	999.	.-80.	3x3.	Starport.....	...8...

Notes: See the notes with the first chart in this series.

o Structure list, size sort:

Structure	Size	Cost	Power	Shield	Prerequisite building(s)	First mission
Rocket turret.....	1x1.	250.	.-20.	..500.	Outpost.....	...6...
Turret.....	1x1.	125.	.-10.	..250.	Outpost.....	...5...
Wall section.....	1x1.	..50.	...0.	..140.	Outpost.....	...4...
Barracks (soldier).....	2x2.	300.	.-10.	..600.	Outpost.....	...2...
Barracks (trooper).....	2x2.	400.	.-20.	..800.	Outpost.....	...2...
Concrete slab.....	2x2.	..15.	...0.	...40.	Construction yard..	...1...
Construction yard.....	2x2.	N/A.	...0.	..800.	None.....	...1...
Hi-Tech.....	2x2.	500.	.-35.	1,000.	Outpost and factory|	...5...
Outpost.....	2x2.	400.	.-30.	1,000.	Windtrap.....	...2...
Spice silo.....	2x2.	150.	..-5.	..300.	Refinery.....	...2...
Windtrap.....	2x2.	300.	..100.	..400.	Construction yard..	...1...
Refinery.....	3x2.	400.	.-30.	..900.	Windtrap.....	...1...
Repair facility.....	3x2.	700.	.-20.	1,800.	Outpost and factory|	...5...
Vehicle factory, Atreides.|	3x2.	400.	.-20.	..800.	Refinery.....	...2...
Vehicle factory, Harkonnen|	3x2.	400.	.-20.	..800.	Refinery.....	...3...
Vehicle factory, Ordos....	3x2.	400.	.-20.	..800.	Refinery.....	...2...
Palace.....	3x3.	999.	.-80.	2,000.	Starport.....	...8...
Starport.....	3x3.	500.	.-50.	1,000.	Refinery.....	...6...

Notes: See the notes with the first chart in this series.

o Structure list, prerequisite sort:

Structure	Prerequisite building(s)	Cost	Power	Shield	Size	First mission
Concrete slab.....	Construction yard..	..15.	...0.	...40.	2x2.	...1...
Windtrap.....	Construction yard..	300.	..100.	..400.	2x2.	...1...
Construction yard.....	None.....	N/A.	...0.	..800.	2x2.	...1...
Barracks (soldier).....	Outpost.....	300.	.-10.	..600.	2x2.	...2...
Barracks (trooper).....	Outpost.....	400.	.-20.	..800.	2x2.	...2...

Rocket turret.....	|	Outpost.....	|	250.	|	-20.	|	..500.	|	1x1.	|	...6...
Turret.....	|	Outpost.....	|	125.	|	-10.	|	..250.	|	1x1.	|	...5...
Wall section.....	|	Outpost.....	|	.50.	|	..0.	|	..140.	|	1x1.	|	...4...
Hi-Tech.....	|	Outpost and factory	|	500.	|	-35.	|	1,000.	|	2x2.	|	...5...
Repair facility.....	|	Outpost and factory	|	700.	|	-20.	|	1,800.	|	3x2.	|	...5...
Spice silo.....	|	Refinery.....	|	150.	|	..-5.	|	..300.	|	2x2.	|	...2...
Starport.....	|	Refinery.....	|	500.	|	-50.	|	1,000.	|	3x3.	|	...6...
Vehicle factory, Atreides.	|	Refinery.....	|	400.	|	-20.	|	..800.	|	3x2.	|	...2...
Vehicle factory, Harkonnen	|	Refinery.....	|	400.	|	-20.	|	..800.	|	3x2.	|	...3...
Vehicle factory, Ordos....	|	Refinery.....	|	400.	|	-20.	|	..800.	|	3x2.	|	...2...
Palace.....	|	Starport.....	|	999.	|	-80.	|	2,000.	|	3x3.	|	...8...
Outpost.....	|	Windtrap.....	|	400.	|	-30.	|	1,000.	|	2x2.	|	...2...
Refinery.....	|	Windtrap.....	|	400.	|	-30.	|	..900.	|	3x2.	|	...1...

Notes: See the notes with the first chart in this series.

o Structure list, mission sort:

Structure	|	First mission	|	Cost	|	Power	|	Shield	|	Size	|	Prerequisite building(s)
Concrete slab.....	|	...1...	|	15.	|	..0.	|	..40.	|	2x2.	|	Construction yard..
Construction yard.....	|	...1...	|	N/A.	|	..0.	|	..800.	|	2x2.	|	None.....
Refinery.....	|	...1...	|	400.	|	-30.	|	..900.	|	3x2.	|	Windtrap.....
Windtrap.....	|	...1...	|	300.	|	100.	|	..400.	|	2x2.	|	Construction yard..
Barracks (soldier).....	|	...2...	|	300.	|	-10.	|	..600.	|	2x2.	|	Outpost.....
Barracks (trooper).....	|	...2...	|	400.	|	-20.	|	..800.	|	2x2.	|	Outpost.....
Outpost.....	|	...2...	|	400.	|	-30.	|	1,000.	|	2x2.	|	Windtrap.....
Spice silo.....	|	...2...	|	150.	|	..-5.	|	..300.	|	2x2.	|	Refinery.....
Vehicle factory, Atreides.	|	...2...	|	400.	|	-20.	|	..800.	|	3x2.	|	Refinery.....
Vehicle factory, Ordos....	|	...2...	|	400.	|	-20.	|	..800.	|	3x2.	|	Refinery.....
Vehicle factory, Harkonnen	|	...3...	|	400.	|	-20.	|	..800.	|	3x2.	|	Refinery.....
Wall section.....	|	...4...	|	.50.	|	..0.	|	..140.	|	1x1.	|	Outpost.....
Hi-Tech.....	|	...5...	|	500.	|	-35.	|	1,000.	|	2x2.	|	Outpost and factory
Repair facility.....	|	...5...	|	700.	|	-20.	|	1,800.	|	3x2.	|	Outpost and factory
Turret.....	|	...5...	|	125.	|	-10.	|	..250.	|	1x1.	|	Outpost.....
Rocket turret.....	|	...6...	|	250.	|	-20.	|	..500.	|	1x1.	|	Outpost.....
Starport.....	|	...6...	|	500.	|	-50.	|	1,000.	|	3x3.	|	Refinery.....
Palace.....		...8...		999.		-80.		2,000.		3x3.		Starport.....

Notes: See the notes with the first chart in this series.

11. BARRACKS

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o Barracks specifications:

Structure		Cost		Power		Shield		Size		Prerequisite building		First mission
Barracks (soldier).	|	.300..	|	..-10..	|	..600...	|	.2x2..	|	.Outpost.....	|	...2....
Barracks (trooper).	|	.400..	|	..-20..	|	..800...	|	.2x2..	|	.Outpost.....	|	...2....

- o On the Game Screen, soldier barracks are identical in appearance to trooper barracks.
- o An Ordos player's construction yard can only produce a soldier barracks. In later missions an Ordos player's soldier barracks can be upgraded to produce trooper(s) units.
- o On the construction yard Production Screen, Atreides and Ordos soldier

barracks are not identical in appearance to Harkonnen trooper barracks.

- o On the soldier barracks Production Screen, the soldier image is identical in appearance to the infantry image.
- o On the trooper barracks Production Screen, the troopers image is a slightly refined version of the trooper image.
- o On the Ordos barracks Production Screen, the barracks image will change from soldier to trooper style whenever the barracks itself is first able to produce a trooper unit.
- o A player can change a production order midway through production, or any time before the unit is placed on the battlefield. (The STOP option does not need to be selected before changing a production order.) In either case, credits from the cancelled order are returned.
- o If a barracks contains a newly-completed unit, it will refuse new Build orders until that unit is discharged from the barracks.
- o Barracks (of any type) cannot be captured.

12. CONCRETE

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- o Concrete specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Concrete slab.	15	0	40	2x2	Construction yard.	1

- o Concrete slabs can be placed anywhere, as long as at least one quadrant of the slab's placement grid is green. When the A button is pressed, concrete will replace all green quadrants of the placement grid, and nothing will appear in any red quadrants. If all four quadrants are red, the player must find another area to place the concrete, or select STOP (or choose another structure) on the construction yard Production Screen.
- o Credits are not returned when only part of a concrete slab is placed. (Production of a concrete slab will always consume about 15 credits, even if only one the slab's four quadrants are placed.)
- o Unlike the numerical limit on buildings and units, construction and placement of concrete is ultimately limited only by the amount of accessible rock terrain.
- o Concrete can only be directly targeted for attack by Death Hands and self-destructing Devastators. Otherwise, concrete may only be damaged or destroyed by stray missile and rocket fire, or by an attack on a unit or building above the concrete.
- o Clicking on concrete with the Selection Cursor has no effect (no ID icon or status bar is displayed).
- o Concrete cannot be fixed.
- o Concrete does not appear on radar.

13. CONSTRUCTION YARD

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- o Construction yard specifications:

Structure	Cost	Power	Shield	Size	Prerequisite buildings	First mission
Construction yard.	.N/A..	...0...	..800...	.2x2..	.None.....	...1....

- o A player's initial construction yard will not be susceptible to damage from lack of power until after a friendly windtrap is placed (or an enemy windtrap is captured).
- o Construction yards do not draw power from windtraps. However, if windtraps are not meeting the power demands of other friendly buildings, then all friendly buildings, including construction yards, become susceptible to damage from the lack of power.
- o If a construction yard is not the currently-selected building when it finishes a structure, an "OK" symbol appears over the construction yard. Clicking on that construction yard will bring up the finished structure's placement grid.
- o Once a player has a palace or starport, the player's construction yard(s) will be unable to produce another (unless/until the current palace or starport is destroyed).
- o A player can change a production order midway through production, or any time before the structure is placed on the battlefield. (The STOP option does not need to be selected before changing a production order.) In either case, credits from the cancelled order are returned.
- o A captured construction yard can only produce structures of the type already available to the attacker. For example, if a Harkonnen player captures the Atreides construction yard in mission 2, the barracks type available there switches from soldier to trooper, and the vehicle factory option disappears.
- o If a player's last/only windtrap is destroyed, all player-controlled construction yards will lose the ability to produce anything but concrete and windtraps. Note that this is not true for Computer-controlled construction yards. Computer construction yards may rebuild any destroyed Computer building at any time.
- o On the construction yard Production Screen, soldier barracks are not identical in appearance to trooper barracks.
- o All new construction yards have concrete pre-selected for the first Build option.
- o Construction yards may be captured.

14. HI-TECH

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- o Hi-Tech specifications:

Structure	Cost	Power	Shield	Size	Prerequisite buildings	First mission
Hi-Tech..	|500..	|-35..	|1,000..	|2x2..	|Outpost and vehicle factory	...5...

- o A House requires both a Hi-Tech facility and a vehicle factory to produce special ground vehicles (specifically Devastators, Deviators and sonic

tanks). If a House's last/only Hi-Tech is destroyed, any special unit being produced for that House will be unmade, and the credits invested in the production will be returned. At any vehicle factory where this happens, the special-unit option will disappear, and the current Build option will be reset to the first/lowest-priced unit available.

- o If a player's last/only Hi-Tech is destroyed, all player-controlled vehicle factories will lose the ability to produce special ground vehicles (specifically Devastators, Deviators and sonic tanks). Note that this is not true for Computer-controlled vehicle factories. Computer vehicle factories can always build any type of vehicle available to that House in that mission.
- o On the Hi-Tech Production Screen, the ornithopter is referred to as a "THOPTER.
- o Carryalls produced at a Hi-Tech will tend to remain in the general area around the Hi-Tech unless/until they have a target to move to. Ornithopters produced at a Hi-Tech will patrol over the entire battlefield in search of a target.
- o Hi-Tech facilities may be captured.

15. OUTPOST

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- o Outpost specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Outpost...	.400..	..-30..	.1,000..	.2x2..	.Windtrap.....	...2....

- o If a player's last/only outpost is destroyed, all player-controlled vehicle factories will lose the ability to upgrade buildings. Note that this is not true for Computer-controlled vehicle factories. Computer vehicle factories can always build any type of vehicle available to that House in that mission.
- o Outposts cannot be captured.

16. PALACE

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- o Palace specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Palace....	.999..	..-80..	.2,000..	.3x3..	.Starport.....	...8....

- o Whenever any new palace is placed on the battlefield, its weapon/ability will be available for immediate use.
- o Once a player has a palace, the player's construction yard(s) will be unable to produce another (unless/until the current palace is destroyed).
- o Clicking on a friendly palace will display the icon of the palace's special weapon/ability in the Command Window. If the palace is not ready to launch an attack, then a status bar may appear under the Command Window which indicates the amount of Game Time elapsing until the weapon/ability is ready. (If the weapon/ability was used recently, the status bar will be at zero length for some time before beginning to increase again.) The longer the status bar, the closer the weapon/ability is to being ready.

- o A palace's weapon/ability is regenerated after each use. This regeneration process will take a variable amount of real time, depending on the palace's House, and how fast Game Time is elapsing. (Game Time generally slows down with an increase in units on the battlefield, speeds up with a decrease in units, and is suspended whenever the Game Screen is not displayed.) During a typical game with minimal pausing, it takes 11 to 12 minutes of real time for a Harkonnen palace to produce a new Death Hand, 15 to 16 minutes for a Sardaukar palace to produce a new Death Hand, about 4 minutes for an Atreides palace to regenerate the summon-Fremen ability, and 6 to 7 minutes for an Ordos palace to produce a new saboteur. Note that damage to a palace will not increase this time delay.
- o To shorten the long delay between weapon/ability regenerations at a palace, quickly destroy and replace the palace after each use. (Whenever any new palace is placed on the battlefield, its weapon/ability will be available for immediate use.)
- o It costs no credits to repair a palace.
- o It may be difficult for a player to win a mission if all spice has been harvested and funds are insufficient to assemble a conquering force. A palace then becomes invaluable, as its weapon/ability can be used at no cost, and can regenerate indefinitely.
- o A palace cannot directly target itself with its own weapon/ability.
- o A palace can continue to prepare its special weapon/ability while it is being fixed.
- o If an Ordos palace is tightly surrounded by other buildings, walls, or ground units, it may be difficult or impossible to deploy a saboteur.
- o If a friendly unit is clicked on with the palace's Targeting Cursor, that unit will request orders (whether or not it has been accepted as a valid target).
- o The units produced or summoned by a palace do not count against the numerical limit on units for each House in a given mission.
- o Palaces cannot be captured.

17. REFINERY

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- o Refinery specifications:

	Structure	Cost	Power	Shield	Size	building	Prerequisite	First mission
Refinery..	.400..	..-30..	..900..	.3x2..	.Windtrap.....1....	

- o Clicking on a friendly refinery will display its ID icon with 2 status bars. Under the damage status bar will be an orange status bar indicating the amount of spice stored at each refinery and silo under the player's control. When this status bar is at maximum length, all friendly refineries and silos are full.
- o Whenever spice is received by a House, the spice is immediately divided equally among all friendly storage facilities (refineries and silos). A House's total quantity of stored spice is also immediately divided equally

among all its storage facilities whenever additional facilities become available through construction or capture.

- o When spice is used (when credits are spent), an equal share of the total spice amount is removed from all friendly storage facilities.
- o Although refineries and silos are normally capable of holding up to 1,000 units of spice each, this capacity may sometimes increase to 1,005 units.
- o A damaged refinery can still hold at least 1,000 credits' worth of spice.
- o The refinery has a "docking bay" with lights that will flash in a pattern whenever a harvester is expected to arrive there.
- o In general, a refinery can accommodate only 1 harvester at a time. An exception is when one harvester next to the refinery is ordered inside as another harvester is simultaneously entering. In this case, both units may enter, and the first harvester will be unloaded and released before the second harvester.
- o Generally, if all harvesters are destroyed, a carryall will bring in a new one. However, if a refinery is destroyed while a player's last available harvester is unloading there, the destroyed harvester may not be automatically replaced by carryall.
- o Carryalls tend to deliver harvesters to the last friendly refinery which was built or captured.
- o When a refinery is damaged, the transformation of spice into credits while a harvester is unloading there will begin to slow.
- o Damage inflicted on a refinery will not affect a harvester unloading there. While a harvester is unloading at a refinery it will be immune to any damage unless/until the refinery itself is completely destroyed (in which case the harvester is also destroyed).
- o If a refinery is destroyed, any spice it contained is also destroyed.
- o Refineries may be captured.
- o If a refinery is captured while a harvester is unloading there, the harvester is captured also.

18. REPAIR FACILITY

=====

- o Repair facility specifications:

Structure	Cost	Power	Shield	Size	Prerequisite buildings	First mission
Repair facility	700.	.-20.	1,800.	3x2.	Outpost and vehicle factory	...5...

- o Clicking on a revealed/detected repair facility will display the facility's ID icon. If the facility is friendly and is currently repairing a unit, that unit's icon and a growing blue status bar will also be shown. The blue status bar indicates repair progress; When this status bar is at maximum length, the unit is fully repaired.
- o If a repair facility is tightly surrounded by other buildings, walls, or ground units, then most units scheduled to be repaired there will be dropped

off at the facility by carryall.

- o When a unit has been repaired at a facility which is tightly surrounded by other buildings, walls, or ground units, a carryall will remove that unit and return it to the battlefield. If that unit was originally brought to the facility by carryall, then the carryall which retrieves the repaired unit will attempt to return it to its original location on the battlefield.
- o Soldier, infantry and trooper(s) units will ignore orders to move to friendly repair facilities. However, the facility will repair them if they are brought to the facility by a carryall.
- o Airborne units cannot be repaired.
- o A unit will disregard orders to move to a friendly repair facility if the facility is already repairing a unit.
- o The repair facility will usually only accept the last unit ordered into it. In other words, when a unit is ordered to move to a repair facility, any other friendly units already en route to the repair facility will stop just outside it, and default to Guard mode.
- o In general, a repair facility can repair only 1 unit at a time. If 2 units are sent to be repaired, and the second unit attempts to enter while the first is still inside, the second unit's move order is cancelled, and it will not enter after the first has been repaired. (An exception is when one unit next to the repair facility is ordered inside while another unit is simultaneously entering. In this case, both units may enter, and the second unit will be repaired and released before the first unit.)
- o Friendly ground combat units can be ordered to fire upon all friendly structures except repair facilities and concrete.
- o If a player's last/only harvester is in a repair facility, and there are not enough credits available to complete repairs on it, it will not be replaced by carryall (and the House will be left without a means to harvest spice). When this happens, the repair facility must be destroyed, or an enemy refinery must be captured (or another solution must be found) in order for a new harvester to be made available.
- o Most ground units, whether damaged or not, will consume credits when sent into a repair facility. Minimal credit consumption for repairs:

Unit	Credits
Combat tank..	...2....
Devastator...	...6....
Deviator.....	...6....
Harvester....	...2....
Infantry.....	...1....
MCV.....	...9....
Missile tank..	...3....
Quad.....	...1....
Raider trike..	...1....
Siege tank...	...5....
Soldier.....	...0....
Sonic tank...	...5....
Trike.....	...1....
Trooper.....	...1....
Troopers.....	...1....

- o A repair facility will not repair units while the facility itself is being fixed.
- o A Devastator which is armed for self-destruction when it enters a repair facility will be repaired (if necessary) and will remain armed when it exits the facility.
- o Soldier, infantry and trooper(s) units cannot be directly ordered into a friendly repair facility. However, if such a unit is ordered to move to a location it cannot reach, a carryall (if available) will pick up the unit and drop it at any available friendly repair facility.
- o In the repair facility, the STOP command will not affect the repair of a unit. The STOP command will only stop repairs on the facility itself.
- o Carryalls will not deliver harvesters or MCVs to repair facilities; Harvesters and MCVs must use a ground path in order to enter a repair facility. Note, however, that a carryall can retrieve a harvester or MCV from a repair facility if the repaired unit becomes blocked inside or otherwise cannot find a ground path to exit the facility.
- o Repair facilities may be captured.
- o If a player-controlled unit captures a Computer-controlled repair facility, any unit being repaired there is also captured.

19. ROCKET TURRET

=====

- o Rocket turret specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Rocket turret.	.250..	..-20..	..500...	.1x1..	.Outpost.....	...6....

- o When a rocket turret is placed, its weapons will be facing north.
- o Rocket turrets will fire automatically on any enemy ground unit or ornithopter within range.
- o Computer-controlled rocket turrets may fire on any player carryalls which come within range.
- o A rocket turret which is targeting an airborne unit will tend to ignore enemy ground units until the airborne unit is destroyed.
- o Rocket turrets will not directly target enemy structures, Death Hands, or frigates.
- o Rocket turret rockets can be fired over all structures or units without damaging them. Rocket turret cannons can fire over all friendly structures, most enemy structures, and all friendly or enemy units without damaging them. Rocket turret cannons cannot fire over mountains, enemy turrets and rocket turrets, or enemy walls.
- o Rocket turrets will not return fire if they are attacked by friendly units.
- o On the construction yard Production Screen, rocket turrets are referred to as R-TURRETS.

- o Rocket turrets will continue to function while being fixed.
- o Rocket turrets will attack only 1 target at a time.
- o Although rocket turrets have 2 rocket pods, only one rocket is fired per attack.
- o A rocket turret's maximum scan range for targets is 8 spaces. Note that once fired, a rocket can travel far beyond the rocket turret's scan range.
- o Rocket turret target scan range:

```

8765432101234567
+-----+
8|+++++RR+++++|8
7|++++RRRRR++++|7
6|+++RRRRRRRRR+++|6
5|++RRRRRRRRRRR++|5
4|++RRRRRRRRRRR++|4
3|+RRRRRCCR+|3
2|+RRRRRCCCR+|2
1|RRRRRCCCCRRR|1
0|RRRRRCC#CCR|0
1|+RRRRRCCCR+|1
2|+RRRRRCCR+|2
3|++RRRRRRRRR++|3
4|++RRRRRRRRRRR++|4
5|+++RRRRRRRRR+++|5
6|+++++RRRRR++++|6
7|+++++RR+++++|7
+-----+
8765432101234567

```

Notes: The "#" indicates the rocket turret; "R" indicates where a target will trigger the launching of a rocket; "C" indicates where a target will trigger the firing of the cannon; "+" indicates a space outside of the rocket turret's scan range.

- o Rocket turrets may be captured.

20. SPICE SILO

- o Silo specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Spice silo.	.150..	..-5...	..300...	.2x2..	.Refinery.....	...2....

- o Clicking on a friendly spice silo will display its ID icon with 2 status bars. Under the damage status bar will be an orange status bar indicating the amount of spice stored at each silo and refinery under the player's control. When this status bar is at maximum length, all friendly silos and refineries are full.
- o Whenever spice is received by a House, the spice is immediately divided equally among all friendly storage facilities (refineries and silos). A House's total quantity of stored spice is also immediately divided equally among all its storage facilities whenever additional facilities become

available through construction or capture.

- o When spice is used (when credits are spent), an equal share of the total spice amount is removed from all friendly storage facilities.
- o If a silo is destroyed, any spice it contained is also destroyed.
- o Although refineries and silos are normally capable of holding up to 1,000 units of spice each, this capacity may sometimes increase to 1,005 units.
- o A damaged silo can still hold at least 1,000 credits' worth of spice.
- o Spice silos may be captured.

21. STARPORT

=====

- o Starport specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Starport..	.500..	..-50..	.1,000..	.3x3..	.Refinery.....	...6....

- o Once a player has a starport, the player's construction yard(s) will be unable to produce another (unless/until the current starport is destroyed).
- o When a starport is first placed on the battlefield, it will show a random number of units available, and each unit type will have a random price.
- o Prices of units available at a starport will change every few minutes of Game Time. All unit prices will change simultaneously.
- o Airborne units are generally not included in the numerical limit placed on ground units, and have a separate maximum numerical limit. An exception to this occurs when purchasing ornithopters from a starport, which cannot be done if the numerical limit on ground units has been reached.
- o The moment any unit is purchased at a Starport, the Order Screen is replaced with the Game Screen, which will show the starport ID icon with 2 status bars. Under the damage status bar will be a growing blue status bar which indicates Game Time elapsing. When this status bar is at maximum length, a frigate carrying the purchased unit(s) will enter the battlefield's airspace. During the wait for the frigate, a player may purchase additional units at the starport (up to the maximum that unit availability, credits, time, and the game's limits on total existing units will allow).
- o The starport has a "landing pad" with lights that will flash in a pattern whenever a frigate is expected to arrive there.
- o Once a frigate has entered the battlefield to land at a starport, the starport will be unable to request additional units. New units can be purchased again only after the frigate has left the battlefield.
- o When a unit type is out of stock at a starport, it will be in stock again eventually. Unit types are restocked individually or in larger groups.
- o Units available at starports:

| ATREIDES AND	| HARKONNEN
| ORDOS MISSIONS	| MISSIONS

UNIT	6	7	8/9	6	7/8/9
Combat tank..	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..
Harvester....	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..
MCV.....	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..
Missile tank..	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..
Ornithopter..	.No...	.No...	.Yes..	.No...	.No...
Quad.....	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..
Siege tank...	.No...	.Yes..	.Yes..	.No...	.Yes..
Trike.....	.Yes..	.Yes..	.Yes..	.Yes..	.Yes..

Notes: Harkonnen starports never provide ornithopters. Other than this one exception, starports for each House will have the same unit types available in a given mission.

- o If a starport is tightly surrounded by other buildings, walls, or ground units, a carryall will remove individual units from frigates which attempt to unload there, and will then place those units on the battlefield.
- o If a starport is expecting a frigate, but is destroyed before the frigate arrives, the frigate will drop each purchased unit at a random point on the battlefield.
- o The STOP command on the starport Order Screen will only stop repairs to the starport. The STOP command will not affect delivery of purchased units.
- o Computer-controlled bases will not include starports, nor will the Computer attempt to build starports in any mission.
- o On the starport's Order Screen, the missile tank is referred to as a LAUNCHER.
- o On the starport's Order Screen, the ornithopter is referred to as a "THOPTER.

22. TURRET

=====

- o Turret specifications:

	Cost	Power	Shield	Size	Prerequisite building	First mission
Turret....	.125..	..-10..	..250...	.1x1..	.Outpost.....	...5....

- o When a turret is placed, its cannon will be facing north.
- o Turrets will fire automatically on any enemy ground unit or ornithopter within range.
- o Computer-controlled turrets may fire on any player carryalls which come within range.
- o A turret which is targeting an airborne unit will tend to ignore enemy ground units until the airborne unit is destroyed.
- o Turrets will not directly target enemy structures, Death Hands, or frigates.
- o Turrets can fire over all friendly structures, most enemy structures, and all friendly or enemy units without damaging them. Turrets cannot fire over mountains, enemy turrets and rocket turrets, or enemy walls.

- o Turrets will not return fire if they are attacked by friendly units.
- o Turrets may be captured.
- o Turrets will continue to function while being fixed.
- o A turret's maximum scan range for targets is 5 spaces. Note that once fired, a cannon shell can travel far beyond the turret's scan range.
- o Turret target scan range:

```

5432101234
+-----+
5|++++CC+++|5
4|+CCCCC++|4
3|+CCCCCCCC+|3
2|+CCCCCCCC+|2
1|CCCCCCCCC|1
0|CCCC#CCCC|0
1|+CCCCCCCC+|1
2|+CCCCCCCC+|2
3|+CCCCC++|3
4|++++CC+++|4
+-----+
5432101234

```

Notes: The "#" indicates the turret; "C" indicates where a target will trigger the firing of the cannon; "+" indicates a space outside of the turret's scan range.

23. VEHICLE FACTORY

=====

- o Vehicle factory specifications:

Structure	Cost	Power	Shield	Size	Prerequisite	First mission
Vehicle factory, Atreides.	400.	.-20.	.800..	3x2.	Refinery....	...2...
Vehicle factory, Harkonnen	400.	.-20.	.800..	3x2.	Refinery....	...3...
Vehicle factory, Ordos....	400.	.-20.	.800..	3x2.	Refinery....	...2...

- o A player can change a production order midway through production, or any time before the vehicle is placed on the battlefield. (The STOP option does not need to be selected before changing a production order.) In either case, credits from the cancelled order are returned.
- o If a House's last/only existing harvester is destroyed while another is being built, and there are not enough credits available to complete the new harvester, the destroyed harvester will not be replaced by carryall (and the House will be left without a means to harvest spice). When this happens, the construction order must be cancelled (or another solution must be found) in order for a new harvester to be made available.
- o On the vehicle factory Production Screen, the missile tank is referred to as a LAUNCHER.
- o Vehicle factories may be captured.

24. WALL

=====

o Wall section specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Wall section.	..50..	...0...	..140...	.1x1..	.Outpost.....	...4....

- o Unlike the numerical limit on buildings and units, construction and placement of wall sections is ultimately limited only by the amount of accessible rock terrain.
- o Upon placement, wall sections will automatically connect horizontally or vertically to any other adjacent friendly or enemy wall sections, and will also attempt to connect horizontally or vertically to adjacent areas where pre-existing friendly or enemy wall sections or buildings were destroyed. Existing wall sections can also reconfigure in such a way when they connect to a new wall section.
- o Wall sections are not damaged if placed directly on rock.
- o Wall sections take a random amount of damage before being destroyed.
- o Clicking on a wall section with the Selection Cursor has no effect (no ID icon or status bar is displayed).
- o Wall sections cannot be fixed.
- o Walls provide no defense against sonic blasts. Wall sections also cannot be affected by sonic blasts.
- o Saboteurs can pass over enemy walls, and may do so without slowing down.
- o Wall sections do not appear on radar.

25. WINDTRAP

=====

o Windtrap specifications:

Structure	Cost	Power	Shield	Size	Prerequisite building	First mission
Windtrap..	.300..	..100..	..400...	.2x2..	.Construction yard.	...1....

- o Clicking on a friendly windtrap will display its ID icon with 2 status bars. Under the damage status bar will be a blue status bar indicating the power demand on each windtrap under the player's control. When this status bar is at maximum length, all friendly windtraps are being tapped of all available power.
- o Windtraps do not need to be physically connected to friendly buildings to have an effect on them. Destruction of concrete, wall sections or other buildings between a windtrap and other friendly buildings will not cut the windtrap's power supply to those buildings. Also, if a player captures a Computer-controlled windtrap, its power output is diverted to the player's buildings.
- o If a player's windtraps cannot meet power demands, a lightning-bolt symbol will begin flashing at the center of each of those windtraps. Note that these symbols will never appear on Computer-controlled windtraps.

- o When windtraps are not supplying enough power, all friendly buildings which are less than 50% damaged will begin to slowly deteriorate to a 50%-damaged status. (Buildings which are already at least 50% damaged are not affected by a lack of power.)
- o Damaged buildings draw as much power from windtraps as undamaged buildings of the same type.
- o If a player's last/only windtrap is destroyed, all player-controlled construction yards will lose the ability to produce anything but concrete and windtraps. Note that this is not true for Computer-controlled construction yards. Computer construction yards may rebuild any destroyed Computer building at any time.
- o Windtraps may be captured.

26. MANAGEMENT OF BUILDINGS

=====

- o Whenever spice is received by a House, the spice is immediately divided equally among all friendly storage facilities (refineries and silos). A House's total quantity of stored spice is also immediately divided equally among all its storage facilities whenever additional facilities become available through construction or capture.
- o When spice is used (when credits are spent), an equal share of the total spice amount is removed from all friendly storage facilities.
- o A construction or repair project can be started with as little as 1 credit.
- o When a new structure's placement grid appears, the upper left corner of the grid will replace the Selection Cursor. If this corner is placed over any part of the originating construction yard, pressing the A button will enter the construction yard's Production Screen instead of placing (or attempting to place) the new structure.
- o In general, if each square in a structure's placement grid contains at least 50% rock, the structure can be placed. Any patches of sand under a structure become rock when the structure is placed.
- o While a building is being repaired or upgraded, it may still accept production orders (if applicable). Note, however, that the order can only be given from that building's Production Screen. (Orders issued with the B button while the Game Screen is displayed would be ignored.) Repairs and/or upgrades are suspended while construction is underway, and resume when construction is complete.
- o An Upgrade order cancels any construction order being carried out in the same building.
- o If an order is issued at a building while a different order is already being carried out at the same building, the results will vary depending on those orders. Dual-order results chart:

Overlapping orders	| Results
----- -----	
Build (Game Screen), Fix.....	|.Build paused during Fix, then proceeds..
Build (Production Screen), Fix.....	|.Build paused during Fix, then proceeds..
Build (Game Screen), Upgrade.....	|.Build cancelled, Upgrade proceeds.....
Build (Production Screen), Upgrade..	|.Build cancelled, Upgrade proceeds.....

```

Fix, Build (Game Screen).....|.Fix proceeds, Build ignored.....
Fix, Build (Production Screen).....|.Fix cancelled, Build proceeds.....
Fix, Purchase (starport only).....|.Both proceed.....
Fix, Refine (refinery only).....|.Both proceed.....
Fix, Repair (repair facility only).|.Repair paused during Fix, then proceeds.
Fix, Upgrade.....|.Fix cancelled, Upgrade proceeds.....
Purchase (starport only), Fix.....|.Both proceed.....
Refine (refinery only), Fix.....|.Both proceed.....
Repair (repair facility only), Fix.|.Repair paused during Fix, then proceeds.
Upgrade, Build (Production Screen).|.Upgrade cancelled, Build proceeds.....
Upgrade, Fix.....|.Fix paused during Upgrade, then proceeds
-----

```

Notes: This chart shows all possible results when any two orders are issued to a given building, and the second order has been issued while the first is still being executed.

A Build order can be selected from an appropriate building's Production Screen menu, or can be issued with the B button when the building is selected on the Game Screen.

Note that even while Fix is suspended, the hammer symbol will continue to flash over the building being fixed.

A palace can continue to prepare its special weapon/ability while it is being fixed.

A "Refine order" is initiated when a harvester enters a refinery; A "Repair order" is initiated when a unit enters a repair facility.

A Stop order at any building cancels all production, fixing and upgrading at that building. A Stop order will not affect Purchase or Repair orders.

- o Three different symbols can appear at the center of player buildings under varying circumstances: 1) The "OK" symbol, which appears at a construction yard or palace which is awaiting further orders, 2) the lightning-bolt symbol, which appears at windtraps when they fail to meet energy demands, and 3) the hammer symbol, which appears at buildings under repair. (Note that when more than one symbol is displayed at the same building, the "OK" symbol will overlay a hammer symbol; a hammer symbol will overlay a lightning-bolt symbol.)
- o While a building is being upgraded, a Fix order can also be issued to the building. A player can issue a Fix order to an upgrading building even when there are no credits available to make the repairs. (When this happens, the hammer symbol will continue to flash over the building until enough credits become available to complete repairs, or until the Fix order is cancelled.)

27. UPGRADING BUILDINGS

- o There are no buildings to be upgraded in mission 1 (for any House).
- o Starting with mission 4, some buildings may be upgraded twice. Starting with mission 6, an Ordos barracks may be upgraded 3 times. (An Ordos barracks is the only building in the game that can be upgraded 3 times in a single mission.)
- o Some captured Computer buildings may require upgrades to reach their full manufacturing potential.
- o Number of building upgrades per mission, quick-reference chart:

	ATREIDES MISSIONS	ORDOS MISSIONS	HARKONNEN MISSIONS
BUILDING	1:2:3:4:5:6:7:8:9	1:2:3:4:5:6:7:8:9	1:2:3:4:5:6:7:8:9
	-:-:-:-:-:-:-:-	-:-:-:-:-:-:-:-	-:-:-:-:-:-:-:-

```

Barracks.....|.:1:1:1:1:1:1:1:1|.:1:1:2:2:3:3:3:3|.....:1:1:1:1:1:1.
Construction yard|.:.....:1:.....|.:.....:1:.....|.:.....:1:.....
Hi-Tech.....|.:.....:1:.....|.:.....:1:.....|.:.....:1:.....
Vehicle factory..|.:.:1:2:2:2:.....|.:.:1:2:1:1:.....|.:.....:2:1:1:.....

```

Notes: Houses indicated are player-controlled Houses, only.
At the start of a mission, initial barracks types are soldier barracks for House Atreides and House Ordos, and trooper barracks for House Harkonnen.
Harkonnen Hi-Techs are never upgraded.

o Upgrade detail chart, mission 2:

	FIRST/ONLY UPGRADE
BUILDING	COST : NEW OPTION
Barracks, Atreides.	.150...:Infantry...
Barracks, Ordos....	.150...:Infantry...

o Upgrade detail chart, mission 3:

	FIRST/ONLY UPGRADE
BUILDING	COST : NEW OPTION
Barracks, Atreides.....	.150...:Infantry...
Barracks, Ordos.....	.150...:Infantry...
Vehicle factory, Atreides.	.200...:Quad.....
Vehicle factory, Ordos....	.200...:Quad.....

o Upgrade detail chart, mission 4:

	FIRST UPGRADE	SECOND UPGRADE
BUILDING	COST : NEW OPTION(S)	COST : NEW OPTION
Barracks, Atreides....	.150...:Infantry.....:.....
Barracks, Harkonnen...	.200...:Troopers.....:.....
Barracks, Ordos.....	.150...:Infantry.....	.150...:Trooper...
Vehicle factory (all).	.200...:Harvester and combat tank.	.300...:MCV.....

Notes: Vehicle factories for all Houses are considered identical, here.

o Upgrade detail chart, mission 5:

	FIRST UPGRADE	SECOND UPGRADE
BUILDING	COST : NEW OPTION	COST : NEW OPTION
Barracks, Atreides.....	.150...:Infantry.....:.....
Barracks, Harkonnen.....	.200...:Troopers.....:.....
Barracks, Ordos.....	.150...:Infantry.....	.150...:Trooper.....
Vehicle factory, Atreides..	.300...:MCV.....	.300...:Missile tank
Vehicle factory, Harkonnen.	.300...:Missile tank.:.....
Vehicle factory, Ordos.....	.300...:MCV.....:.....

o Upgrade detail chart, mission 6:

	FIRST UPGRADE	SECOND UPGRADE	THIRD UPGRADE
--	---------------	----------------	---------------

BUILDING	COST:NEW OPTION	COST:NEW OPTION	COST:NEW OPTION
Barracks, Atreides.....	150.:Infantry.....	.....	.....
Barracks, Harkonnen.....	200.:Troopers.....	.....	.....
Barracks, Ordos.....	150.:Infantry.....	150.:Trooper...	200.:Troopers..
Construction yard (all)...	200.:Rocket turret	.....	.....
Vehicle factory, Atreides.	300.:Missile tank.	300.:Siege tank	.....
Vehicle factory, Harkonnen	300.:Siege tank...	.....	.....
Vehicle factory, Ordos....	300.:Siege tank...	.....	.....

Notes: Construction yards for all Houses are considered identical, here.

o Upgrade detail chart, mission 7:

	FIRST UPGRADE	SECOND UPGRADE	THIRD UPGRADE
BUILDING	COST:NEW OPTION	COST:NEW OPTION	COST:NEW OPTION
Barracks, Atreides.	150.:Infantry...	.....	.....
Barracks, Harkonnen	200.:Troopers...	.....	.....
Barracks, Ordos....	150.:Infantry...	150.:Trooper...	200.:Troopers..
Hi-Tech, Atreides..	250.:Ornithopter	.....	.....
Hi-Tech, Ordos.....	250.:Ornithopter	.....	.....

o Upgrade detail chart, mission 8:

	FIRST UPGRADE	SECOND UPGRADE	THIRD UPGRADE
BUILDING	COST:NEW OPTION	COST:NEW OPTION	COST:NEW OPTION
Barracks, Atreides.	150.:Infantry..	.....	.....
Barracks, Harkonnen	200.:Troopers..	.....	.....
Barracks, Ordos....	150.:Infantry..	150.:Trooper...	200.:Troopers..

o Upgrade detail chart, mission 9:

	FIRST UPGRADE	SECOND UPGRADE	THIRD UPGRADE
BUILDING	COST:NEW OPTION	COST:NEW OPTION	COST:NEW OPTION
Barracks, Atreides.	150.:Infantry..	.....	.....
Barracks, Harkonnen	200.:Troopers..	.....	.....
Barracks, Ordos....	150.:Infantry..	150.:Trooper...	200.:Troopers..

o After a building is successfully upgraded, its default Build option (shown on the Game Screen when the building is initially clicked on) will change to the option which is now available as a result of the upgrade.

28. UNITS: GENERAL
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- o Unless otherwise specified, the term "units" in this document generally refers to any mobile component of any House's combat, harvesting or support force. The term "airborne units" in this document refers specifically to all carryalls, frigates and ornithopters.
- o In every mission, there is a preset limit on the number of ground units, and a separate preset limit on the number of airborne units, that a House may have at any one time. If a House reaches its limit on ground units, all friendly vehicle factories and barracks will refuse to manufacture new units, and any friendly starport will refuse to purchase additional units of any

type (airborne or ground). Similarly, if a House reaches its limit on airborne units, all friendly Hi-Techs will refuse to manufacture new units, and any friendly starport will refuse to purchase additional airborne units. These limits vary from mission to mission, and only apply to units that are directly manufactured or purchased by that House. (Friendly reinforcement units that are spontaneously dropped off by carryall, palace-generated units, and frigates do not count against a House's unit limits. Also, a House may always acquire additional carryalls and harvesters through the construction of new refineries.)

- o The term "range" in this document refers to the maximum linear distance between two points on a horizontal or vertical line. This distance is measured in "spaces", where 1 space is an area equal in size and shape to 1 quadrant of a concrete slab. (See the examples of range under section 19: Rocket Turret, and section 22: Turret.)
- o The term "Reveal Range" in this document refers to the largest area of the battlefield that a player-controlled object will reveal/detect when it is placed on the battlefield, moves, or fires. It also refers to the largest area of the battlefield that a Computer-controlled object will reveal to player-controlled forces when it fires.
- o The Reveal Range for player-controlled ground units varies by unit type, by whether the unit is moving or stationary, and by whether the unit is in Escort mode or not.
- o While a player-controlled ground unit is moving to a destination, and/or while it is in Escort mode (see section 50: Management Of Units), its Reveal Range is reduced. Specifically, a player-controlled ground unit (excluding Fremmen and saboteur units) moving or escorting in unexplored territory will reveal/detect only the space it occupies, and the 8 surrounding spaces. A Fremmen or saboteur unit in motion does not reveal any unexplored territory beyond the one space it occupies.
- o Minimum Reveal Range for ground units other than Fremmen and saboteurs:

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Notes: A "#" represents an area roughly equivalent in size to 1 quadrant of a concrete slab. Here, a unit would be at the center of this 3x3 matrix.

- o Ground units of any type (and belonging to any House) may occasionally cross paths when they should normally not be able to do so. When this happens, one unit will overlap the other, and neither unit will be damaged.
- o Airborne units of any type (and belonging to any House) can cross paths at any time without affecting one another.
- o An airborne unit can be damaged if it overflies an explosion (including projectile impacts on terrain, buildings or units).
- o Once a unit has been ordered to attack a target unit, the target unit can be tracked and followed into unexplored/unrevealed territory.
- o If a Computer-controlled ground unit, turret or rocket turret fires from a position which is not visible on the battlefield, that position and the area around it will be revealed/detected.

- o Any unit which fires 2 projectiles per attack will fire only 1 projectile per attack if it becomes 50% damaged.
- o Any unit which fires 2 projectiles per attack can split its attack between 2 targets if one target is destroyed with the first projectile, and/or the attacking unit is given new orders before the second projectile is fired.
- o Ground units may ignore intervening objects when firing on targets. Results of such attacks vary depending on the type of attacking unit and the weapon used. Deviators and missile tanks can fire over intervening objects; Trooper(s) and Fremen units can fire over objects when rockets are used; and sonic tanks can fire through mountains and walls without damaging them. With any other type of attack from a ground unit, intervening mountains will block attacks and remain undamaged, and intervening friendly and enemy buildings and walls will block the attack and be damaged. In most attacks, intervening friendly and enemy units will not be hit or damaged (exceptions to this can include damage from sonic blasts, inaccurate missile attacks and/or secondary damage from explosions at target locations).
- o Solid projectiles may be fired over sandworms without striking them. Sonic blasts directed at another target will damage intervening sandworms.
- o Airborne units are generally not included in the numerical limit placed on ground units, and have a separate maximum numerical limit. An exception to this occurs when purchasing ornithopters from a starport, which cannot be done if the numerical limit on ground units has been reached.
- o When a unit is in Escort mode, it will attempt to move a minimal distance every time the escorted unit begins to move. If the escorting unit is unable to do this, it may discard its Escort order and default to Guard mode.
- o On occasion, when a combat tank, Deviator, harvester, MCV, missile tank, siege tank or sonic tank is destroyed, it will leave behind a soldier, which will be undamaged and in Guard mode.
- o With the exception of harvesters, Fremen and MCVs, all friendly ground units in Guard mode will occasionally "fidget", reorienting themselves (and/or their turrets, where applicable) at random times. Computer-controlled ground units in Guard mode remain motionless, with the possible exception of saboteurs in Area-guard mode.
- o Airborne units do not reveal unexplored territory.
- o Note that on occasion an explosion may itself become a target. Specifically, an exploding enemy unit can remain a target until it explodes and the fireball fades away. Until this happens, friendly forces may continue to fire at that location, causing more explosions there. This cycle of firing and explosions may be repeated several times.
- o A unit's orders will be cancelled (and it will default to Guard mode) if its target has been destroyed. "Target" here means any unit or building it was ordered to move to and/or attack, or any unit that it was ordered to escort.
- o In general, when a ground unit cannot carry out an order, it will default to Guard mode. If 2 ground units are ordered to occupy the same empty target space, the first unit to arrive will go into Guard mode; the second unit to arrive will wait indefinitely for a chance to move into the target location. During this wait, the unit will ignore all other enemy buildings and units until it can complete the move, or until its move order is cancelled/changed.

- o As a player-controlled ground unit is destroyed, its Reveal Range increases to maximum, and any unrevealed/undetected territory around that unit is revealed/detected accordingly.
- o Combat units in Guard mode will never directly target walls for attack.
- o Soldier, infantry, trooper and troopers units in Guard mode will not attempt to capture enemy buildings.
- o Sand dunes will not slow the movement of ground units any more than flat sand will.
- o Under varying circumstances, a ground unit may occasionally be produced which will accumulate damage simply by moving. Such a unit will slowly accumulate damage as it moves, and will eventually be destroyed if it is frequently in motion and never repaired. (Note that repairing such a "decaying" unit will restore it to an undamaged state, but does not alter its susceptibility to movement-related damage.)
- o When an infantry unit or a troopers unit is 50% damaged, it will be reduced from a 3-individual group to a single, full-strength individual (an infantry unit is reduced to a soldier; a troopers unit is reduced to a trooper). When this happens, the surviving soldier or trooper may attempt to retreat from combat and return to its point of origin (typically a space adjacent to the barracks which produced the original infantry or troopers unit). While a unit is retreating, it will not return fire if fired upon. If and when the retreating unit reaches its destination, it will stop and go into Guard mode. Note that a retreating player unit can be given new orders at any time, while a retreating Computer unit cannot. (A retreating Computer unit will attempt only to reach its point of origin; Once it stops retreating, it will go into Guard mode and may remain stationary for the rest of the game.)
- o Ground units may not always pick the shortest path to a destination, and may occasionally become locked in a repeating search pattern when attempting to negotiate a path around large obstacles. If this happens with a player unit, it can be given a series of new Move commands to break the desired path into smaller steps.
- o When not moving to specific targets, ornithopters and carryalls which remain in the vicinity of the battlefield will patrol continuously. Most patrolling carryalls tend to move in tight, distorted clockwise circles or ovals, while patrolling ornithopters tend towards larger, sweeping clockwise patterns, with occasional counterclockwise curves or loops.
- o Damaged ground units can only summon carryalls which are already present on the battlefield.
- o Ground units can exit a factory or other building through any side, and can appear at any unoccupied space immediately adjacent to the building.
- o Availability of units through production or purchase, quick-reference chart:

	ATREIDES MISSIONS	ORDOS MISSIONS	HARKONNEN MISSIONS
UNIT TYPE	|2:3:4:5:6 :7 :8 :9	|2:3:4:5:6 :7 :8 :9	|2:3:4:5:6 :7 :8 :9
Carryall.....	|.:.:X:X.X.X.X.	|.:.:X:X.X.X.X.	|.:.:X:X.X.X.X.
Combat tank..	|.:X:X.X.X.X.X.	|.:X:X.X.X.X.X.	|.:X:X.X.X.X.X.
Death Hand...	|.:.:.:.:.:.:.	|.:.:.:.:.:.:.	|.:.:.:.:.:X:X.
Devastator...	|.:.:.:.:.:.:.	|.:.:.:.:.:.:.	|.:.:.:.:X:X.X.

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)	To build requires
Carryall.....	800.	..0.	..100..	..200..	N/A..	Refinery/Hi-Tech.....	Hi-Tech.
Combat tank..	300.	..38.	..200..	..25..	..4..	Vehicle factory/starport.	Outpost.
Death Hand...	..0.	..150.	..70..	..250..	N/A..	Palace.....	.....
Devastator...	800.	..60.	..400..	..10..	..5..	Vehicle factory.....	Hi-Tech.
Deviator.....	750.	..0.	..120..	..30..	..7..	Vehicle factory.....	Hi-Tech.
1-Fremen unit	..0.	..8.	..90..	..15..	..3..	Palace.....	.....
3-Fremen unit	..0.	..8.	..220..	..10..	..3..	Palace.....	.....
Harvester....	300.	..0.	..150..	..30..	N/A..	Refinery/factory/starport	.....
Infantry.....	100.	..4.	..50..	..5..	..2..	Barracks.....	.....
MCV.....	900.	..0.	..150..	..20..	N/A..	Vehicle factory/starport.	Outpost.
Missile tank.	450.	..112.	..100..	..30..	..9..	Vehicle factory/starport.	Outpost.
Ornithopter..	600.	..75.	..5..	..150..	..5..	Hi-Tech/starport.....	Hi-Tech.
Quad.....	200.	..10.	..130..	..50..	..3..	Vehicle factory/starport.	.....
Raider trike.	150.	..8.	..80..	..75..	..3..	Vehicle factory.....	.....
Saboteur.....	..0.	..150.	..40..	..40..	..2..	Palace.....	.....
Siege tank...	600.	..45.	..300..	..20..	..5..	Vehicle factory/starport.	Outpost.
Soldier.....	..60.	..4.	..20..	..8..	..2..	Barracks.....	.....
Sonic tank...	600.	..90.	..110..	..30..	..8..	Vehicle factory.....	Hi-Tech.
Trike.....	150.	..8.	..100..	..60..	..3..	Vehicle factory/starport.	.....
Trooper.....	100.	..8.	..45..	..15..	..3..	Barracks.....	.....
Troopers.....	200.	..8.	..110..	..10..	..3..	Barracks.....	.....

Notes: Some units are only available to certain Houses, and/or are only available in later missions.

"Cost" indicates only the unit's manufacturing cost at a barracks, vehicle factory or Hi-Tech facility. (At starports, a given unit's cost will vary over time.) "Speed" is maximum speed for airborne units, and maximum speed for ground units on concrete; "Range" is maximum weapon range; "To build requires" indicates a building which is required in order to manufacture this unit. (This is usually a building which is required in addition to the factory or Hi-Tech where the unit will be manufactured.) "N/A" means "Not Applicable"; "Vehicle factory" and "factory" are synonymous terms here. The starport frigate is not included in this chart. For more information, see section 35: Frigate.

This document uses the ornithopter range rating of 5, which is used in the actual game. The manual included with the game rates an ornithopter's range at 50.

This document uses the ornithopter shield rating of 5, which is used in the actual game (appearing on the Hi-Tech Production Screen and the starport Order Screen). The manual included with the game rates an ornithopter's shield at 3.

This document uses the trooper speed rating of 15, which is used in the actual game. The manual included with the game rates a trooper unit's speed at 10.

This document uses the troopers speed rating of 10, which is used in the actual game. The manual included with the game rates a troopers unit's speed at 15.

o Unit list, cost sort:

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)	To build requires
Death Hand...	..0.	..150.	..70..	..250..	N/A..	Palace.....	.....
1-Fremen unit	..0.	..8.	..90..	..15..	..3..	Palace.....	.....
3-Fremen unit	..0.	..8.	..220..	..10..	..3..	Palace.....	.....
Saboteur.....	..0.	..150.	..40..	..40..	..2..	Palace.....	.....

Soldier.....	.60.	.4.	.20.	.8.	.2.	Barracks.....	.....
Infantry.....	100.	.4.	.50.	.5.	.2.	Barracks.....	.....
Trooper.....	100.	.8.	.45.	.15.	.3.	Barracks.....	.....
Raider trike.	150.	.8.	.80.	.75.	.3.	Vehicle factory.....	.....
Trike.....	150.	.8.	100.	.60.	.3.	Vehicle factory/starport.	.....
Quad.....	200.	.10.	.130.	.50.	.3.	Vehicle factory/starport.	.....
Troopers.....	200.	.8.	.110.	.10.	.3.	Barracks.....	.....
Combat tank..	300.	.38.	.200.	.25.	.4.	Vehicle factory/starport.	Outpost.
Harvester....	300.	.0.	.150.	.30.	N/A.	Refinery/factory/starport	.....
Missile tank.	450.	112.	.100.	.30.	.9.	Vehicle factory/starport.	Outpost.
Ornithopter..	600.	.75.	.5.	.150.	.5.	Hi-Tech/starport.....	Hi-Tech.
Siege tank...	600.	.45.	.300.	.20.	.5.	Vehicle factory/starport.	Outpost.
Sonic tank...	600.	.90.	.110.	.30.	.8.	Vehicle factory.....	Hi-Tech.
Deviator.....	750.	.0.	.120.	.30.	.7.	Vehicle factory.....	Hi-Tech.
Carryall.....	800.	.0.	.100.	.200.	N/A.	Refinery/Hi-Tech.....	Hi-Tech.
Devastator...	800.	.60.	.400.	.10.	.5.	Vehicle factory.....	Hi-Tech.
MCV.....	900.	.0.	.150.	.20.	N/A.	Vehicle factory/starport.	Outpost.

Notes: See the notes with the first chart in this series.

o Unit list, arms sort:

Unit	Arms	Cost	Shield	Speed	Range	Provided at (will vary by mission number and House)	To build requires
Carryall.....	.0.	800.	.100.	.200.	N/A.	Refinery/Hi-Tech.....	Hi-Tech.
Deviator.....	.0.	750.	.120.	.30.	.7.	Vehicle factory.....	Hi-Tech.
Harvester....	.0.	300.	.150.	.30.	N/A.	Refinery/factory/starport	.....
MCV.....	.0.	900.	.150.	.20.	N/A.	Vehicle factory/starport.	Outpost.
Infantry.....	.4.	100.	.50.	.5.	.2.	Barracks.....	.....
Soldier.....	.4.	.60.	.20.	.8.	.2.	Barracks.....	.....
1-Fremen unit	.8.	.0.	.90.	.15.	.3.	Palace.....	.....
3-Fremen unit	.8.	.0.	.220.	.10.	.3.	Palace.....	.....
Raider trike.	.8.	150.	.80.	.75.	.3.	Vehicle factory.....	.....
Trike.....	.8.	150.	.100.	.60.	.3.	Vehicle factory/starport.	.....
Trooper.....	.8.	100.	.45.	.15.	.3.	Barracks.....	.....
Troopers.....	.8.	200.	.110.	.10.	.3.	Barracks.....	.....
Quad.....	.10.	200.	.130.	.50.	.3.	Vehicle factory/starport.	.....
Combat tank..	.38.	300.	.200.	.25.	.4.	Vehicle factory/starport.	Outpost.
Siege tank...	.45.	600.	.300.	.20.	.5.	Vehicle factory/starport.	Outpost.
Devastator...	.60.	800.	.400.	.10.	.5.	Vehicle factory.....	Hi-Tech.
Ornithopter..	.75.	600.	.5.	.150.	.5.	Hi-Tech/starport.....	Hi-Tech.
Sonic tank...	.90.	600.	.110.	.30.	.8.	Vehicle factory.....	Hi-Tech.
Missile tank.	112.	450.	.100.	.30.	.9.	Vehicle factory/starport.	Outpost.
Death Hand...	150.	.0.	.70.	.250.	N/A.	Palace.....	.....
Saboteur.....	150.	.0.	.40.	.40.	.2.	Palace.....	.....

Notes: See the notes with the first chart in this series.

o Unit list, shield sort:

Unit	Shield	Cost	Arms	Speed	Range	Provided at (will vary by mission number and House)	To build requires
Ornithopter..	.5.	600.	.75.	.150.	.5.	Hi-Tech/starport.....	Hi-Tech.
Soldier.....	.20.	.60.	.4.	.8.	.2.	Barracks.....	.....
Saboteur.....	.40.	.0.	150.	.40.	.2.	Palace.....	.....
Trooper.....	.45.	100.	.8.	.15.	.3.	Barracks.....	.....
Infantry.....	.50.	100.	.4.	.5.	.2.	Barracks.....	.....
Death Hand...	.70.	.0.	150.	.250.	N/A.	Palace.....	.....

Raider trike.	..80..	|150.	|..8.	|..75.	|..3..	|Vehicle factory.....	|.....
1-Fremen unit	..90..	|..0.	|..8.	|..15.	|..3..	|Palace.....	|.....
Carryall.....	|.100..	|800.	|..0.	|.200.	|N/A..	|Refinery/Hi-Tech.....	|Hi-Tech.
Missile tank.	|.100..	|450.	|112.	|..30.	|..9..	|Vehicle factory/starport.	|Outpost.
Trike.....	|.100..	|150.	|..8.	|..60.	|..3..	|Vehicle factory/starport.	|.....
Sonic tank...	|.110..	|600.	|.90.	|..30.	|..8..	|Vehicle factory.....	|Hi-Tech.
Troopers.....	|.110..	|200.	|..8.	|..10.	|..3..	|Barracks.....	|.....
Deviator.....	|.120..	|750.	|..0.	|..30.	|..7..	|Vehicle factory.....	|Hi-Tech.
Quad.....	|.130..	|200.	|.10.	|..50.	|..3..	|Vehicle factory/starport.	|.....
Harvester....	|.150..	|300.	|..0.	|..30.	|N/A..	|Refinery/factory/starport	|.....
MCV.....	|.150..	|900.	|..0.	|..20.	|N/A..	|Vehicle factory/starport.	|Outpost.
Combat tank..	|.200..	|300.	|.38.	|..25.	|..4..	|Vehicle factory/starport.	|Outpost.
3-Fremen unit	|.220..	|..0.	|..8.	|..10.	|..3..	|Palace.....	|.....
Siege tank...	|.300..	|600.	|.45.	|..20.	|..5..	|Vehicle factory/starport.	|Outpost.
Devastator...	|.400..	|800.	|.60.	|..10.	|..5..	|Vehicle factory.....	|Hi-Tech.

Notes: See the notes with the first chart in this series.

o Unit list, speed sort:

Unit	Speed	Cost	Arms	Shield	Range	Provided at (will vary by mission number and House)	To build requires
Infantry.....	..5.	|100.	|..4.	|..50..	|..2..	|Barracks.....	|.....
Soldier.....	..8.	|.60.	|..4.	|..20..	|..2..	|Barracks.....	|.....
Devastator...	..10.	|800.	|.60.	|.400..	|..5..	|Vehicle factory.....	|Hi-Tech.
3-Fremen unit	..10.	|..0.	|..8.	|.220..	|..3..	|Palace.....	|.....
Troopers.....	..10.	|200.	|..8.	|.110..	|..3..	|Barracks.....	|.....
1-Fremen unit	..15.	|..0.	|..8.	|..90..	|..3..	|Palace.....	|.....
Trooper.....	..15.	|100.	|..8.	|..45..	|..3..	|Barracks.....	|.....
MCV.....	..20.	|900.	|..0.	|.150..	|N/A..	|Vehicle factory/starport.	|Outpost.
Siege tank...	..20.	|600.	|.45.	|.300..	|..5..	|Vehicle factory/starport.	|Outpost.
Combat tank..	..25.	|300.	|.38.	|.200..	|..4..	|Vehicle factory/starport.	|Outpost.
Deviator.....	..30.	|750.	|..0.	|.120..	|..7..	|Vehicle factory.....	|Hi-Tech.
Harvester....	..30.	|300.	|..0.	|.150..	|N/A..	|Refinery/factory/starport	|.....
Missile tank.	..30.	|450.	|112.	|.100..	|..9..	|Vehicle factory/starport.	|Outpost.
Sonic tank...	..30.	|600.	|.90.	|.110..	|..8..	|Vehicle factory.....	|Hi-Tech.
Saboteur.....	..40.	|..0.	|150.	|..40..	|..2..	|Palace.....	|.....
Quad.....	..50.	|200.	|.10.	|.130..	|..3..	|Vehicle factory/starport.	|.....
Trike.....	..60.	|150.	|..8.	|.100..	|..3..	|Vehicle factory/starport.	|.....
Raider trike.	..75.	|150.	|..8.	|..80..	|..3..	|Vehicle factory.....	|.....
Ornithopter..	.150.	|600.	|.75.	|..5..	|..5..	|Hi-Tech/starport.....	|Hi-Tech.
Carryall.....	.200.	|800.	|..0.	|.100..	|N/A..	|Refinery/Hi-Tech.....	|Hi-Tech.
Death Hand...	.250.	|..0.	|150.	|..70..	|N/A..	|Palace.....	|.....

Notes: See the notes with the first chart in this series.

o Unit list, range sort:

Unit	Range	Cost	Arms	Shield	Speed	Provided at (will vary by mission number and House)	To build requires
Infantry.....	..2..	|100.	|..4.	|..50..	|..5.	|Barracks.....	|.....
Saboteur.....	..2..	|..0.	|150.	|..40..	|..40.	|Palace.....	|.....
Soldier.....	..2..	|.60.	|..4.	|..20..	|..8.	|Barracks.....	|.....
1-Fremen unit	..3..	|..0.	|..8.	|..90..	|..15.	|Palace.....	|.....
3-Fremen unit	..3..	|..0.	|..8.	|.220..	|..10.	|Palace.....	|.....
Quad.....	..3..	|200.	|.10.	|.130..	|..50.	|Vehicle factory/starport.	|.....
Raider trike.	..3..	|150.	|..8.	|..80..	|..75.	|Vehicle factory.....	|.....
Trike.....	..3..	|150.	|..8.	|.100..	|..60.	|Vehicle factory/starport.	|.....

Trooper.....	|..3..	|100.	|..8.	|..45..	|..15.	|Barracks.....	|.....
Troopers.....	|..3..	|200.	|..8.	|110..	|..10.	|Barracks.....	|.....
Combat tank..	|..4..	|300.	|.38.	|.200..	|..25.	|Vehicle factory/starport.	|Outpost.
Devastator...	|..5..	|800.	|.60.	|.400..	|..10.	|Vehicle factory.....	|Hi-Tech.
Ornithopter..	|..5..	|600.	|.75.	|...5..	|.150.	|Hi-Tech/starport.....	|Hi-Tech.
Siege tank...	|..5..	|600.	|.45.	|.300..	|..20.	|Vehicle factory/starport.	|Outpost.
Deviator.....	|..7..	|750.	|.0.	|.120..	|..30.	|Vehicle factory.....	|Hi-Tech.
Sonic tank...	|..8..	|600.	|.90.	|.110..	|..30.	|Vehicle factory.....	|Hi-Tech.
Missile tank..	|..9..	|450.	|.112.	|.100..	|..30.	|Vehicle factory/starport.	|Outpost.
Carryall.....	|N/A..	|800.	|.0.	|.100..	|.200.	|Refinery/Hi-Tech.....	|Hi-Tech.
Death Hand...	|N/A..	|.0.	|.150.	|.70..	|.250.	|Palace.....	|.....
Harvester....	|N/A..	|300.	|.0.	|.150..	|..30.	|Refinery/factory/starport|	|.....
MCV.....	N/A..	900.	.0.	.150..	..20.	Vehicle factory/starport.	Outpost.

Notes: See the notes with the first chart in this series.

29. CARRYALL

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o Carryall specifications:

Unit	Cost	Arms	Shield	Speed	Range	mission number and House	Provided at (will vary by House)	To build requires
Carryall	|800.	|.0.	|.100..	|.200.	|N/A..	|Refinery/Hi-Tech.....	|.....	|Hi-Tech.

- o A carryall is white, trimmed with the House color of the side controlling it.
- o Carryalls do not appear on radar.
- o Clicking on a carryall has no effect. A player cannot target, order, or get the damage status of a carryall.
- o Carryalls may be made available to a House under varying circumstances. In missions 5 through 9, carryalls may be manufactured by any House; But in all 9 missions, carryalls may also be provided on a temporary basis from outside sources. Manufactured carryalls and those delivered with refineries patrol the battlefield continuously, awaiting tasks to perform, while "outside" carryalls will enter the battlefield only when required, and then leave again when they are no longer being utilized. Note that damaged ground units can only summon carryalls which are already present on the battlefield.
- o Carryalls are not confined to the battlefield, and may cross its borders at any time.
- o Carryalls can automatically retrieve full harvesters and bring them back to refineries. They can also remove unloaded harvesters from refineries and place them on the battlefield.
- o Carryalls can automatically retrieve damaged ground units and bring them back to repair facilities.
- o Friendly carryalls may, from time to time, drop off new reinforcement units (this will vary by House, and mission number). If a unit is dropped off in a location that is not visible on the battlefield, the unit and the area around it will be revealed/detected. Note that this is the only time a friendly carryall may transport more than one unit at a time.
- o Starting with mission 4, Computer-controlled carryalls may, from time to time, drop off Computer-controlled ground units near a player's structures. Note that more than one Computer unit at a time may be transported by a

single Computer carryall.

- o Starting with mission 4, Computer-controlled carryalls may continue to drop off Computer units even after that House's base can no longer produce units.
- o Carryalls will not reveal unexplored territory.
- o If a carryall is destroyed, anything it was carrying is also destroyed.
- o Carryalls can transport units to and from repair facilities and vehicle factories when those buildings are tightly surrounded by other buildings, walls, or ground units. If a starport is surrounded in this way, a carryall will remove individual units from frigates which attempt to unload there, and will then place those units on the battlefield.
- o Any unit's Move, Attack, or Escort order is cancelled if it is picked up by a carryall. A Devastator's Self-Destruct order is not cancelled, but is suspended until it is returned to the battlefield.
- o Carryalls produced at a Hi-Tech will tend to remain in the general area around the Hi-Tech unless/until they have a target to move to.
- o If a carryall is delivering a harvester to a refinery, and the refinery is destroyed before the carryall reaches it, the carryall will search for another unoccupied friendly refinery and make the delivery there, if possible. If no such refinery exists, the carryall will keep the harvester and will begin to patrol the battlefield. If a new friendly refinery is made available, the carryall may deliver the harvester, or it may continue to patrol.
- o If a harvester is ordered to move to a location that it cannot reach (or is ordered to escort a unit it cannot escort), a carryall will attempt to retrieve the harvester, and take it to an unoccupied friendly refinery. If such a refinery is not available, the carryall will fail to make the pickup, and will repeat the attempt until a refinery is available, or until the harvester's orders are changed so that it no longer requires pickup.
- o If a ground unit other than a harvester or MCV is ordered to move to a location that it cannot reach, a carryall may attempt to retrieve the unit, and take it to an unoccupied friendly repair facility. (If no friendly repair facilities exist, no carryall is summoned, and the unit returns to Guard mode.)
- o In general, a carryall will attempt to retrieve any unit which is ordered to move to a location that the unit cannot reach on its own. However, if the player orders an MCV to a location that it cannot reach, the MCV will likely be ignored by carryalls.
- o Any number of carryalls may become available for transporting units. The number of carryalls available at a given time does not necessarily correspond to the number of carryalls provided with refineries and/or manufactured at Hi-Techs.
- o Deviator missiles cannot affect carryalls; However, a Deviator missile explosion beneath an overflying enemy carryall may deviate any unit(s) held by the carryall.
- o Carryalls will not deliver harvesters or MCVs to repair facilities; Harvesters and MCVs must use a ground path in order to enter a repair facility. Note, however, that a carryall can retrieve a harvester or MCV

Devastator|800.|.60.|.400..|.10..|.5..|Vehicle factory.....|Hi-Tech.

- o On the Game Screen, Devastators are somewhat similar in appearance to siege tanks. Note that Devastators have squarish turrets with cannon barrels set relatively close together. Siege tanks have rounded turrets with cannon barrels set relatively far apart.
- o A Devastator does not have a rotating turret; the entire tank must turn to face a target.
- o An undamaged Devastator can fire up to 2 cannon shells per attack.
- o If a Computer-controlled Devastator succumbs to an attack from a Deviator, the Devastator may be ordered to self-destruct. If given the self-destruct order while deviated, the order will be carried out even if the Devastator reverts back to enemy control.
- o A self-destructing Devastator can damage an area of this size and shape:

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Notes: A "#" represents an area equal in size and shape to 1 quadrant of a concrete slab. Here, the Devastator would have exploded at the center of this 3x3 matrix.

- o Concrete which is directly under a self-destructing Devastator is always destroyed. Concrete adjacent to a self-destructing Devastator is never affected.
- o A self-destructing Devastator can damage nearby sandworms.
- o A self-destructing Devastator can damage or destroy overhead airborne units.
- o A Devastator which is ordered to self-destruct will be in Guard mode, and may still fire on enemy buildings or units before exploding.
- o A Devastator ordered to self-destruct will not explode if it is swallowed by a sandworm.
- o A Devastator's Self-Destruct countdown usually lasts about 4.5 seconds.
- o Devastators can be used to overrun enemy soldier, infantry, trooper(s), Fremen or saboteur units.

33. DEVIATOR

- o Deviator specifications:

Unit	Cost	Arms	Shield	Speed	Range	mission number and House	provided at	To build requires
Deviator	750.	.0..	.120..	..30.	..7..	Vehicle factory.....	Hi-Tech.	

- o On the Game Screen, Deviators are identical in appearance to missile tanks (difference in House colors being the only exception).
- o Deviators cannot directly affect terrain (with the exception of spice blooms) or unharvested spice.

- o Deviators in Guard mode will not fire on enemy structures.
- o Deviators in Guard mode will fire on enemy saboteurs and may fire on sandworms.
- o If ordered to fire on a spice bloom, a Deviator will only fire at it once, and then go into Guard mode. A direct hit from a Deviator missile will detonate the spice bloom. (This is the only instance where a Deviator missile can directly affect terrain.)
- o A Deviator will fire only 1 missile per attack.
- o Deviator missiles can affect any units within in area of this size and shape:

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Notes: A "#" represents an area equal in size and shape to 1 quadrant of a concrete slab. Here, the missile impact would be at the center. Any enemy units within this area may be affected (although it is also possible that a given Deviator missile will have no effect on any unit).

- o Missiles will attempt to strike wherever the target was located at the moment of firing.
- o Deviator missiles can affect most enemy ground units, and enemy ornithopters.
- o Deviator missiles have no effect on friendly or enemy structures, friendly units, carryalls, Fremmen, frigates, saboteurs, or sandworms.
- o Deviator missiles cannot affect carryalls; However, a Deviator missile explosion beneath an overflying enemy carryall may deviate any unit(s) held by the carryall.
- o When a ground unit is deviated, it goes into Guard mode.
- o On the Game Screen, a deviated unit's coloring will change to the House color of the side controlling the Deviator. If the deviation effect wears off, the unit's color changes back. The radar screen will also show the color changes of deviated ground units.
- o When a Deviator successfully attacks an enemy unit, that unit will be under the control of the House operating the Deviator. The affected unit can revert back once it is fired upon by any other unit, turret or rocket turret, or when the Deviator gas effect wears off.
- o After a House deviates a unit, its forces will ignore that unit unless the unit reverts to enemy control while it is executing an order, or the unit reverts and then executes an enemy order. If a deviated unit in Guard mode reverts but remains in Guard mode, it will not be attacked by the forces of the deviating House.
- o Note that a deviated unit cannot overrun units which belong to its original House. (Example: An Ordos player deviates a Harkonnen tank. The tank, now under Ordos control, is ordered to overrun a Harkonnen trooper. Here, the tank will attempt to maneuver around the trooper, instead.)

- o If a Computer-controlled unit is clicked on, and is then deviated, the Selection Cursor changes to a Targeting Cursor, and the deviated unit is ready to accept an order from the player.
- o When a unit is deviated, it is not subtracted from the unit limit of the House which built it. In other words, if a House is prevented from building or purchasing new units because too many friendly units already exist, then that situation will not change if one or more of those friendly units are deviated by the enemy.
- o Deviated harvesters which revert to Guard mode will not automatically return to friendly refineries; they must be ordered to do so.
- o A harvester can be deviated while it is unloading at a refinery. When this happens, the harvester will continue to unload, and the House which controls the refinery will receive the spice/credits. When the harvester leaves the refinery, it may still be deviated.
- o If a refinery contains an enemy harvester, any nearby friendly units may fire upon the refinery in an attempt to destroy the harvester.
- o If a refinery controlled by one House contains a harvester controlled by another House, a carryall from the first House may remove the harvester. This is the only time a carryall can pick up an enemy unit.
- o Deviated units may be escorted.
- o If a Computer-controlled harvester is deviated, it will be able to accept an order to escort a player-controlled unit. The harvester can continue to escort the player unit until the deviation effect wears off.
- o If a Computer-controlled Devastator succumbs to an attack from a Deviator, the Devastator may be ordered to self-destruct. If given the self-destruct order while deviated, the order will be carried out even if the Devastator reverts back to enemy control.
- o Computer-controlled soldier, infantry or trooper(s) units which are deviated to player control may be used to capture Computer-controlled buildings.
- o Deviators can themselves be deviated by enemy Deviators. When a Deviator is deviated, the nerve gas in the missiles it fires is also changed to benefit the House which now controls it.
- o When deviated units revert to friendly control, they will be in Guard mode.
- o Deviators can be used to overrun enemy soldier, infantry, trooper(s), Fremen or saboteur units.

34. FREMEN

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- o Fremen unit specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
1-Fremen unit.	..0...	..8...	...90...	..15...	...3...	.Palace.....
3-Fremen unit.	..0...	..8...	..220...	..10...	...3...	.Palace.....

- o Fremen may be summoned by the Atreides palace to attack a specific target, or to attack unspecified targets of opportunity. To summon a Fremen attack on a

specific target, click the palace's Targeting Cursor on a friendly or enemy building, friendly or enemy ground unit, or a sandworm (enemy targets may be clicked on in revealed or unrevealed areas). Clicking the palace's Targeting Cursor anywhere else on the battlefield will summon Fremen to attack targets of opportunity, which include only enemy buildings and/or enemy ground units which are visible and detectable to player-controlled forces. If there are no valid targets when Fremen units are summoned, they can still appear, but will remain inactive until a valid target of opportunity is revealed.

- o The Atreides palace will summon from 0 to 5 Fremen units at a time. Each Fremen unit will be either a single Fremen, or a grouped unit of 3 Fremen. These units will all attempt to enter the battlefield simultaneously, in one general area chosen at random. (Note that a Fremen unit will disappear if it emerges on the battlefield in a location shared by another solid object.) If a player's Fremen units appear in a location that is not visible on the battlefield, the units and the area around them will be revealed/detected. From there they will approach any valid target if one exists.
- o On the radar screen, a revealed/detected Fremen unit will appear as a white dot.
- o On the Game Screen, Fremen units are identical in appearance to trooper and/or troopers units, but with House Atreides coloring.
- o If a Fremen unit is fired on by an enemy unit, it may disregard any palace-chosen target, and return fire against the enemy unit. If a Fremen unit is fired on by an enemy turret or rocket turret, it may disregard any palace-chosen target, and attack a nearby target of opportunity, instead.
- o On rare occasions, Fremen units may be ignored by enemy turrets or rocket turrets.
- o Some Fremen units appear as a group of three individuals. When such a unit is 75% damaged, 2 of these individuals are simultaneously destroyed. When this happens, the remaining individual will be a single full-strength Fremen (a "1-Fremen unit").
- o The grouped unit of 3 Fremen will fire twice as often as 1 lone Fremen.
- o A 1-Fremen unit is equivalent to a trooper unit in armament, speed and range, but has double the shield strength. Similarly, a 3-Fremen unit is equivalent to a troopers unit in armament, speed and range, but has double the shield strength. Fremen/trooper(s) comparison chart:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
1-Fremen unit.	...0..	..8...	...90...	..15...	...3...	.Palace.....
Trooper.....	.100..	..8...	...45...	..15...	...3...	.Barracks...
3-Fremen unit.	...0..	..8...	..220...	..10...	...3...	.Palace.....
Troopers.....	.200..	..8...	..110...	..10...	...3...	.Barracks...
- o A player cannot give new orders to Fremen units; Fremen are autonomous after they first appear on the battlefield.
- o Fremen units will launch rockets at targets which are up to 3 spaces away. Closer targets are fired on with heavier projectile weapons.
- o The rockets fired by Fremen can travel over intervening objects to strike a target.

- o Fremen units may all concentrate on a single target, or attack different targets simultaneously.
- o Fremen units cannot be escorted by other units. Atreides combat vehicles will attack targeted Fremen units if ordered to escort them. (If this happens, Fremen units will not return fire.)
- o Up to 7 Fremen units may be active at a time. Once 7 Fremen units are on the battlefield, any further attempt to summon Fremen will have no effect. (An attempt will still use up the palace's summoning ability, but no additional Fremen units are summoned.)
- o The damage status bars under Fremen unit icons can only indicate damage in excess of 50 percent. For example, the damage status bar of a 30%-damaged Fremen unit will look identical to the status bar of an undamaged Fremen unit (both status bars would be green and at full length). A Fremen unit's status bar can visibly change only after half of the unit's shield strength has been depleted.
- o Atreides ground vehicles cannot overrun Fremen units; they will attempt to maneuver around Fremen when necessary.
- o A player-controlled Fremen unit in motion does not reveal any unexplored territory beyond the one space it occupies.
- o Fremen cannot be affected by Deviator missiles.

35. FRIGATE

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- o A frigate is considered a "unit" only in this document. During the game's tutorial and during actual gameplay, there are no references to frigates, nor do frigates appear in the unit descriptions or unit tables in the manual included with the game (pages 22 though 27).
- o On the Game Screen, a frigate appears as a large, metallic, rectangular flying object. (See also the illustration on page 11 of the game manual.)
- o Clicking on a frigate has no effect. A player cannot target, order, or get the damage status of a frigate.
- o A frigate can only be destroyed while at an exploding starport, and is otherwise invulnerable to attack. If a frigate is destroyed, anything it was carrying is also destroyed.
- o A frigate's cruising speed is comparable to that of an ornithopter.
- o A frigate has no offensive capability.
- o Once a frigate has entered the battlefield to land at a starport, the starport will be unable to request additional units. New units can be purchased again only after the frigate has left the battlefield.
- o If a starport is tightly surrounded by other buildings, walls, or ground units, a carryall will remove individual units from frigates which attempt to unload there, and will then place those units on the battlefield.
- o If a starport is expecting a frigate, but is destroyed before the frigate arrives, the frigate will drop each purchased unit at a random point on the battlefield.

- o Frigates will not reveal unexplored territory.
- o Frigates tend to fly north when leaving the battlefield.

36. HARVESTER

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- o Harvester specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)
Harvester.	.300..	..0...	..150...	..30...	.N/A...	.Refinery/factory/starport

- o At the beginning of a mission, when a refinery is completed and placed, the harvester brought to it will begin seeking spice automatically. When the harvester is full, it will return to the refinery (or another friendly refinery, if applicable) and unload automatically. This process is repeated until all spice that can be detected by the harvester has been processed.
- o Spice on sand appears in single and double layers. Harvesters process all spice at one fixed speed, one layer at a time.
- o A harvester can be ordered to harvest spice from an unrevealed/undetected area of the battlefield. (Specifically, a harvester with any free cargo space will begin harvesting whenever it is ordered to move to a spice field, whether or not the spice field was revealed/detected on the battlefield at the time the order was given.)
- o If a harvester succumbs to attack from a Deviator, the harvester can be made to unload in a refinery belonging to the attacker.
- o Clicking on a revealed/detected friendly or enemy harvester will display its ID icon with 2 status bars. Under the damage status bar will be an orange status bar indicating the amount of spice stored in the harvester. When this status bar is at maximum length, the harvester is full.
- o A harvester can hold about 700 credits' worth of spice.
- o A harvester's performance or storage capacity will not be affected by damage.
- o If a harvester enters a refinery, or is picked up by a carryall, any friendly units escorting the harvester will stop and default to Guard mode.
- o In general, if a player has no harvester available, but a player refinery remains, a carryall will deliver a new harvester. However, there are three exceptions to this rule: 1) If any refinery is destroyed while a player's last available harvester is unloading there, or 2) A player's last/only harvester is in a repair facility, and there are not enough credits available to complete repairs on it, or 3) A player's last/only existing harvester is destroyed while another is being built, and there are not enough credits available to complete the new harvester. In all cases, the player's House will be left without a means to harvest spice; In some cases this problem can be corrected (see sections 18: Repair Facility, and 23: Vehicle Factory).
- o When a harvester carrying spice is destroyed, some spice will occasionally survive, and appear on flat sand (if any) at and around the harvester's last position. Spice produced by a destroyed harvester will not be deposited on sand dunes, on rock, or over any sand already covered with spice (with the possible exception of a small spot at the harvester's last position).

- o Once a harvester reaches a refinery and begins unloading, it will not accept new orders or return a status report until it leaves the refinery again.
- o Damage inflicted on a refinery will not affect a harvester unloading there. While a harvester is unloading at a refinery it will be immune to any damage unless/until the refinery itself is completely destroyed (in which case the harvester is also destroyed).
- o A harvester has a limited spice-sensing range. If spice is too far from a harvester, the harvester will not automatically move to it.
- o In every mission, there is a limit on the number of units a player may directly build or purchase. However, harvesters delivered by carryall with the purchase of new refineries are not accounted for. (A player could ultimately have dozens of harvesters in addition to the maximum number of other units.)
- o If a harvester succumbs to an attack from a Deviator, it will cease all activity until it is given new orders, and/or the deviation effect wears off.
- o After deviated units revert to friendly control, they will be in Guard mode. Deviated harvesters which revert will not automatically return to friendly refineries; they must be ordered to do so.
- o If a deviated harvester reverts to enemy status as it enters a friendly refinery, it explodes, damaging the refinery.
- o Once a deviated harvester begins unloading in a refinery, it cannot revert back to enemy control until it leaves the refinery.
- o Normally, harvesters will only escort ground units which have orders of their own (such as Move or Escort). If ordered to escort any other unit, a harvester may move slightly toward the unit, but its Escort order is then cancelled.
- o A full harvester will ignore orders to move to an area of spice-covered sand.
- o Spice can appear underneath any units which are on the sand near a detonating spice bloom. Note that a harvester in Guard mode on empty sand will not automatically begin harvesting if spice appears underneath it.
- o Harvesters will tend to move from low-density spice towards any nearby high-density spice. In this way, harvesters tend to strip off the top layer of spice from bi-level spice fields before harvesting the bottom layer.
- o A harvester can escort an enemy ground unit. If the enemy ground unit is a soldier, infantry, trooper, troopers or Fremmen unit, the harvester will usually overrun it, if possible.
- o If a harvester can exit a refinery, but is then blocked from moving to spice, a carryall will attempt to retrieve the harvester and return it to a refinery. This cycle will repeat until a ground path from the refinery to spice is opened, or the refinery becomes tightly surrounded, forcing a carryall to remove the harvester and place it on the battlefield.
- o Ordering a harvester to move to a refinery while it is carrying out another Move order may cause the harvester to stop outside the refinery, and not enter. (Check the refinery's "docking bay" lights. If they remain dark, no harvester is expected there.)

- o Missile tanks in Guard mode may fire on any enemy ornithopter which comes within range.
- o An undamaged missile tank can fire up to 2 missiles per attack.
- o Missiles will attempt to strike wherever the target was located at the moment of firing.
- o The missile tank cannot directly strike targets closer than 4 spaces away.
- o Missile tanks can be used to overrun enemy soldier, infantry, trooper(s), Fremen or saboteur units.
- o On the starport Order Screen and the vehicle factory Production Screen, the missile tank is referred to as a LAUNCHER.

40. ORNITHOPTER

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- o Ornithopter specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)	To build requires
Ornithopter	600.	.75.	..5...	.150.	..5..	Hi-Tech/starport.....	Hi-Tech.

- o An ornithopter is white, trimmed with the House color of the side controlling it.
- o Ornithopters are not confined to the battlefield, and may cross its borders to leave it temporarily.
- o Clicking on an ornithopter has no effect. A player cannot target, order, or get the damage status of an ornithopter.
- o Ornithopters can only attack buildings, units or sandworms which have been at least partially revealed/detected on the battlefield. In the absence of such targets, an ornithopter will patrol over the battlefield continuously.
- o If an ornithopter fires from an unrevealed/undetected position on the battlefield, that position and the area around it will be revealed/detected.
- o An ornithopter will not reveal unexplored territory unless it fires from an unrevealed position.
- o An ornithopter can fire only 1 rocket per attack.
- o Ornithopter rockets can pass over all terrain features and all friendly and enemy structures and units to strike a target.
- o Turrets, rocket turrets, and missile tanks in Guard mode may fire on any enemy ornithopter which comes within range.
- o An ornithopter can be deviated if it overflies the explosion of an enemy Deviator missile. As with other deviated units, a deviated ornithopter will revert if the gas effect wears off.
- o Ornithopters will not fire on enemy airborne units.
- o On the Hi-Tech Production Screen and the starport Order Screen, the ornithopter is referred to as a "THOPTER.

- o This document uses the ornithopter range rating of 5, which is used in the actual game. The manual included with the game rates an ornithopter's range at 50.
- o This document uses the ornithopter shield rating of 5, which is used in the actual game (appearing on the Hi-Tech Production Screen and the starport Order Screen). The manual included with the game rates an ornithopter's shield at 3.

41. QUAD

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- o Quad specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)
Quad.	.200..	..10..	..130...	..50...	...3...	.Vehicle factory/starport.

- o An undamaged quad can fire up to 2 shells per attack.
- o Quads cannot directly affect terrain (with the exception of spice blooms) or unharvested spice.
- o Quads cannot overrun soldier, infantry, trooper(s), Fremen or saboteur units.

42. RAIDER TRIKE

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- o Raider trike specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
Raider trike.	.150..	..8...	...80...	..75...	...3...	.Vehicle factory

- o On the Game Screen, raider trikes are identical in appearance to trikes (difference in House colors being the only exception).
- o Raider trikes cannot directly affect terrain (with the exception of spice blooms) or unharvested spice.
- o An undamaged raider trike can fire up to 2 shells per attack.
- o Raider trikes cannot overrun soldier, infantry, trooper(s), Fremen or saboteur units.

43. SABOTEUR

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- o Saboteur specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
Saboteur.	..0...	.150..	...40...	..40...	...2...	.Palace.....

- o If an Ordos palace is tightly surrounded on all sides by other buildings, walls, or ground units, it may be unable to deploy a saboteur. There must be at least 1 empty space directly adjacent to the palace in order for a saboteur to be deployed. If there are only a few empty spaces adjacent to a palace, it may take several attempts to deploy a saboteur before it can "find" a space to deploy to.

- o A saboteur may be deployed from the Ordos palace to attack a specific target, or to attack an unspecified target of opportunity. To send a saboteur to attack a specific target, click the palace's Targeting Cursor on an enemy building, enemy ground unit, or a sandworm (these targets may be clicked on in revealed or unrevealed areas). Clicking the palace's Targeting Cursor anywhere else on the battlefield will deploy a saboteur to attack a target of opportunity, which includes only enemy buildings or enemy ground units which are visible and detectable to player-controlled forces. If there are no valid targets when a saboteur is deployed, it will appear, but will remain inactive until a valid target of opportunity is revealed.
- o A saboteur cannot be ordered to attack any friendly structures, enemy concrete or enemy wall sections, friendly units, or enemy units deviated to Ordos control.
- o On the Game Screen, a saboteur is identical in coloring and appearance to a Sardaukar soldier.
- o If a player's saboteur is moving towards a target, and the target is destroyed before the saboteur reaches it, the saboteur will halt in place and wait for a new target of opportunity (an enemy building, ground unit or sandworm which has been revealed/detected on the battlefield).
- o Only 1 saboteur can be active at a time. As soon as a saboteur is ready for deployment at a palace, any other saboteur on the battlefield will instantly self-destruct.
- o A player cannot issue new orders to a saboteur after it has been deployed.
- o Saboteurs can pass over enemy walls, and may do so without slowing down.
- o Saboteurs cannot pass through friendly or enemy buildings, friendly or enemy ground units, or friendly walls.
- o A saboteur's kamikaze attack can destroy any undamaged rocket turret, silo, turret, windtrap, enemy ground unit, or sandworm. Any other undamaged target will be damaged by the attack.
- o A ground unit which is in motion may survive a saboteur's kamikaze attack (but may still receive heavy damage).
- o In addition to its self-destruction/kamikaze capability, a saboteur is armed with a very powerful shell-firing weapon which can be used repeatedly against enemy units or buildings. This weapon is only used if the saboteur is unable to move to its chosen target, forcing it into a special Guard mode.
- o A saboteur can fire only 1 shell per attack (when this special projectile weapon is used).
- o A saboteur's projectile weapon has a maximum range of 2 spaces.
- o If a player's saboteur cannot find or negotiate a path to an available enemy target, it may permanently halt in place. When this happens, the saboteur remains on the battlefield until killed or replaced, and may or may not fire on enemy ground units (or buildings) which appear within firing range of its projectile weapon.
- o Computer-controlled saboteurs will only target player buildings for kamikaze attacks; Player units are never deliberately targeted for kamikaze attacks.

- o If, upon deployment, a Computer-controlled saboteur cannot find or negotiate a path to a player building, it will deactivate, ignoring all player targets. If a path to a player building then becomes available, the saboteur will go into an Area-guard mode, moving to and firing upon any player unit or building within a limited scan range, and will then attempt to return to its starting position (or a point adjacent to its starting position) once the target is destroyed. Computer-controlled saboteur's Area-guard scan range:



Notes: The "0" inside the diagram represents the saboteur's starting point (this point does not move with the saboteur); "G" indicates where a target will trigger a gun/shell-firing weapon attack by the saboteur; "+" indicates a space outside of the saboteur's scan range.

- o A saboteur may be escorted by friendly units.
- o Ground vehicles cannot overrun friendly saboteurs or directly target them for attack.
- o If a ground vehicle overruns an enemy saboteur, the saboteur explodes, often destroying the vehicle.
- o When a saboteur explodes, any other buildings or units directly adjacent to the explosion may also be damaged.
- o Saboteurs cannot capture enemy buildings.
- o When a saboteur is blocked from attacking its intended target, it may attempt to retreat from combat and return to its point of origin (typically a space adjacent to the palace which deployed it). While the saboteur is retreating, it will not return fire if fired upon. If and when the saboteur reaches its destination, it will stop and go into Area-guard mode.
- o Saboteurs cannot be affected by Deviator missiles.

44. SIEGE TANK

- o Siege tank specifications:

Unit	Cost	Arms	Shield	Speed	Range	mission number	Provided at (will vary by House)	To build requires
Siege tank	600.	.45.	.300.	.20.	..5.	Vehicle factory/starport.	Outpost.	

- o On the Game Screen, siege tanks are somewhat similar in appearance to Devastators. Note that siege tanks have rounded turrets with cannon barrels set relatively far apart. Devastators have squarish turrets with cannon

barrels set relatively close together.

- o An undamaged siege tank can fire up to 2 cannon shells per attack.
- o Siege tanks can be used to overrun enemy soldier, infantry, trooper(s), Fremmen or saboteur units.

45. SOLDIER

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- o Soldier specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
Soldier.	..60..	..4...	...20...	...8...	...2...	.Barracks...

- o In the game, a soldier icon depicts a running individual, lightly armed and armored. This icon does not appear in the manual included with the game. (The "soldier" icon on page 22 of the manual is actually the icon used in the game for a trooper.)
- o On the Game Screen, a soldier is somewhat similar in appearance a trooper. Note that a soldier carries a smaller, lighter weapon; A trooper carries a heavy rocket launcher.
- o To attack any structure larger than a turret, a soldier unit must fire from a space adjacent to the target.
- o A soldier unit in Guard mode will tend to ignore an enemy building (other than a turret or rocket turret) which is diagonally adjacent to it.
- o A soldier can fire only 1 shell per attack.

46. SONIC TANK

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- o Sonic tank specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at	To build requires
Sonic tank	|600.	|.90.	|.110.	|.30.	|.8.	|Vehicle factory	|Hi-Tech.

- o When a sonic tank fires, all buildings which are touched by the sonic blast will be damaged. All ground units (with the exception of other friendly or enemy sonic tanks), and sandworms will also be damaged if touched by a sonic blast.
- o A sonic blast can pass unhindered through any object or terrain feature.
- o A sonic tank can fire only 1 sonic blast per attack.
- o A sonic blast has an uneven effect over distance. For example, firing a sonic blast straight along a column of undamaged combat tanks will cause a varying amount of damage to each tank.
- o The visible sonic blast effect will be tinted in the House color of the side controlling the sonic tank.
- o A sonic tank cannot directly affect terrain, unharvested spice, spice blooms, concrete, walls, other sonic tanks (friendly or enemy), or airborne units.

- o Sonic tanks can be used to overrun enemy soldier, infantry, trooper(s), Fremen or saboteur units.

47. TRIKE

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- o Trike specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at (will vary by mission number and House)
Trike.	.150..	..8...	..100...	..60...	...3...	Vehicle factory/starport.

- o On the Game Screen, trikes are identical in appearance to raider trikes (difference in House colors being the only exception).
- o An undamaged trike can fire up to 2 shells per attack.
- o Trikes cannot directly affect terrain (with the exception of spice blooms) or unharvested spice.
- o Trikes cannot overrun soldier, infantry, trooper(s), Fremen or saboteur units.

48. TROOPER

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- o Trooper specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
Trooper.	.100..	..8...	...45...	..15...	...3...	Barracks...

- o In the game, a trooper icon depicts a standing individual, heavily armed and armored. (This icon incorrectly appears next to the "soldier" description on page 22 of the manual included with the game.)
- o On the Game Screen, a trooper is somewhat similar in appearance to a soldier. Note that a trooper carries a heavy rocket launcher; A soldier carries a smaller, lighter weapon.
- o Trooper units will launch rockets at targets which are up to 3 spaces away. Closer targets are fired on with heavier projectile weapons.
- o The rockets fired by a trooper can travel over intervening objects to strike a target.
- o A trooper can fire only 1 shell or rocket per attack.
- o This document uses the trooper speed rating of 15, which is used in the actual game. The manual included with the game rates a trooper unit's speed at 10.

49. TROOPERS

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- o Troopers specifications:

Unit	Cost	Arms	Shield	Speed	Range	Provided at
Troopers.	.200..	..8...	..110...	..10...	...3...	Barracks...

- o In the game, a troopers unit icon depicts a pair of standing individuals,

heavily armed and armored. (This icon incorrectly appears next to the "trooper" description on page 22 of the manual included with the game.)

- o On the Game Screen, troopers units are somewhat similar in appearance to infantry units. Note that troopers units carry heavy rocket launchers; Infantry units carry smaller, lighter weapons.
- o A troopers unit is a group of three individuals. When a troopers unit is 50% damaged, 2 of these individuals are simultaneously destroyed. When this happens, the remaining individual will be a full-strength trooper. Note that this trooper may discard any orders and attempt to retreat from combat.
- o The grouped unit of 3 troopers will fire twice as often as 1 lone trooper.
- o The firepower of a troopers unit remains at maximum until the entire unit is destroyed.
- o Troopers units will launch rockets at targets which are up to 3 spaces away. Closer targets are fired on with heavier projectile weapons.
- o The rockets fired by a troopers unit can travel over intervening objects to strike a target.
- o This document uses the troopers speed rating of 10, which is used in the actual game. The manual included with the game rates a troopers unit's speed at 15.

50. MANAGEMENT OF UNITS

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- o Units will not take action on an order until the order is acknowledged (the ACKNOWLEDGE or MOVING OUT soundbite is played if SOUNDS ARE ON).
- o Most ground units can be ordered to escort other friendly ground units. This is done by clicking on one friendly ground unit, moving the Targeting Cursor to a second friendly ground unit, and clicking again. The first unit will now attempt to move to the second. If the second unit moves, the first will attempt to follow. If the escorted unit is destroyed, the escorting unit(s) will default to Guard mode. Note that while a unit is escorting another, it will ignore all enemy targets and attacks unless/until it is given new orders, or the escorted unit is destroyed, deviated, or is otherwise removed from combat.
- o Harvesters will only escort friendly ground units which have orders of their own (such as Move or Escort). If ordered to escort any other friendly unit, a harvester may move slightly toward the unit, but its Escort order is then cancelled.
- o Friendly ground combat units can be ordered to attack any friendly structures except concrete and repair facilities.
- o Note that player-controlled units can be ordered attack unrevealed/undetected enemy buildings and units at any time. Player units can attack an enemy building whether it is revealed/detected or not; However, if a player unit is ordered to attack an undetected enemy unit, it will attempt to escort (or overrun) the enemy unit instead. When this happens, the player unit will not open fire or defend itself unless/until its orders are changed or cancelled. (When a unit is in Escort mode, it will attempt to move a minimal distance every time the escorted unit begins to move. If the escorting unit is unable to do this, it may discard its Escort order and default to Guard mode.)

- o Harvesters, combat tanks, missile tanks, siege tanks, sonic tanks, Deviators, Devastators and MCVs can be used to overrun and crush enemy soldier, infantry, trooper(s), Fremmen or saboteur units. (Note that if a ground vehicle overruns an enemy saboteur, the saboteur explodes, often destroying the vehicle. When any other unit is overrun, the attacking vehicle remains undamaged.)
- o Soldier, infantry and trooper(s) units will ignore orders to move to friendly repair facilities. However, the facility will repair them if they are brought to the facility by a carryall.
- o Airborne units cannot be ordered into repair facilities.
- o Any friendly units which are attacking, or moving to, an enemy building will stop attacking or moving if the building is captured by a friendly soldier, infantry or trooper(s) unit.
- o If a ground unit succumbs to attack from a Deviator, the unit will lose any Move, Attack or Escort orders given to it, and any units escorting it will also lose their orders and go into Guard mode.
- o Any unit's Move, Attack, or Escort order is cancelled if it is picked up by a carryall. A Devastator's Self-Destruct order is not cancelled, but is suspended until it is returned to the battlefield.
- o In most cases a stationary ground unit will be in Guard mode, and as such will fire when possible on any enemy units that come within range. If it is desired to have a stationary combat unit remain out of Guard mode, order it to move to a space occupied by a mountain, or pair it with another combat unit, and order both units to escort each other. (Note that the first of these two options will not work with soldier, infantry, trooper or troopers units; the second option will.)
- o Game Time (time elapsing within the game environment) generally slows down with an increase in units on the battlefield, speeds up with a decrease in units, and is suspended whenever the Game Screen is not displayed. Game Time may also slow down when units on the battlefield experience difficulty in carrying out orders.

51. CAPTURING BUILDINGS

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- o Building-capturing detail:

Enemy building	Damage status: Green/yellow	Damage status: Red
Barracks, soldier.	.Siege attack may take place.	.Siege attack may take place
Barracks, trooper.	.Siege attack may take place.	.Siege attack may take place
Construction yard.	.Damaged.....	.Captured.....
Hi-Tech.....	.Damaged.....	.Captured.....
Outpost.....	.Siege attack may take place.	.Siege attack may take place
Palace.....	.Siege attack may take place.	.Siege attack may take place
Refinery.....	.Damaged.....	.Captured.....
Repair facility...	.Damaged.....	.Captured.....
Rocket turret....	.Damaged.....	.Captured.....
Spice silo.....	.Damaged.....	.Captured.....
Starport.....	.N/A.....	.N/A.....
Turret.....	.Damaged.....	.Captured.....
Vehicle factory...	.Damaged.....	.Captured.....
Windtrap.....	.Damaged.....	.Captured.....

Notes: This chart details all possible results of directly targeting any Computer building for attack by player soldier, infantry or trooper(s) units. "Damage status" refers to the color of the building's damage status bar at the moment of contact with the attacking unit; "Siege attack" means that the attacking unit will stop near the target building, and may begin firing on it; "Damaged" means the attacking unit disappears into the building and the building is damaged; "Captured" means the attacking unit disappears into the building, and control of the building goes to the attacking House; "N/A" means "Not Applicable".

Computer-controlled bases will not include starports, nor will the Computer attempt to build starports in any mission.

Concrete can only be directly targeted for attack by Death Hands and self-destructing Devastators. Otherwise, concrete may only be damaged or destroyed by stray missile and rocket fire, or by an attack on a unit or building above the concrete.

Friendly and enemy wall sections are besieged when targeted for attack.

- o There are rare occasions when a unit will attempt to capture a building and fail, even though the building's damage status bar appeared red. This usually occurs when the building is under repair, and the building's damage status changes from red to yellow at the moment the unit attempts to enter.
- o If a unit enters a building and fails to capture it, the amount of damage done to the building will vary depending on the type of attacking unit. Ranked in order of lowest to highest damage potential, the units are soldier, infantry, trooper, and troopers.
- o Any friendly units which are attacking, or moving to, an enemy building will stop attacking or moving if the building is captured by a friendly soldier, infantry or trooper(s) unit.
- o A captured construction yard can only produce structures of the type already available to the attacker. For example, if a Harkonnen player captures the Atreides construction yard in mission 2, the barracks type available there switches from soldier to trooper, and the vehicle factory option disappears.
- o If a refinery is captured while a harvester is unloading there, the harvester is captured also.
- o If a player captures a Computer-controlled windtrap, its power output is diverted to the player's buildings.
- o A captured Sardaukar vehicle factory can produce trikes, quads, harvesters, MCVs, combat tanks, missile tanks, siege tanks, and 1 or more special units. These special units vary depending on the capturing House: Devastators are produced for Atreides, Devastators and sonic tanks for Ordos, sonic tanks for Harkonnen. (Note that the capturing House must also control a Hi-Tech in order to produce special units.)
- o A player's House will not gain spice/credits by capturing Computer-controlled refineries or silos.
- o If a player-controlled unit captures a Computer-controlled repair facility, any unit being repaired there is also captured.
- o If a vehicle factory is captured while it is producing a unit, the factory's default production capability will be switched to the type of unit which captured the factory. (This change includes a conversion of the unit that the factory was working on at the time of capture.) For example, a Computer-controlled Harkonnen vehicle factory is producing a quad. Halfway

through production, the factory is captured by a player-controlled Ordos trooper. At that moment, the unit already under production at the factory changes from a Harkonnen quad to an Ordos trooper, which is then released from the factory if/when construction is completed. From this moment on, when the factory is clicked on, the factory's default Build option on the Game Screen will be to produce an Ordos trooper. All other vehicle types that the factory can produce may still be built, but such Build commands must be given from the factory's Production Screen. Note that if the factory is then upgraded (if possible), any barracks-type production option will disappear, and the factory will return to vehicle-only production.

- o Computer-controlled soldier, infantry or trooper(s) units which are deviated to player control may be used to capture Computer-controlled buildings.

52. MULTIPLE-WEAPON UNITS

- o Soldier, infantry, trooper, troopers, Fremmen and saboteur units can each use a variety of weapons and tactics to attack enemy structures and units.

- o Attack abilities of multiple-weapon units:

Unit	Gun	Rocket launcher	Kamikaze ability
1-Fremmen unit, player...	.Yes.	.Yes.....	.No.....
3-Fremmen unit, player...	.Yes.	.Yes.....	.No.....
Infantry, player.....	.Yes.	.No.....	.Yes.....
Saboteur, player.....	.Yes.	.No.....	.Yes.....
Soldier, player.....	.Yes.	.No.....	.Yes.....
Trooper, player.....	.Yes.	.Yes.....	.Yes.....
Troopers, player.....	.Yes.	.Yes.....	.Yes.....

Notes: Guns/shell-firing weapons may be used by all of these units against targets which are 1 to 2 spaces away. Rocket launchers are used by some units against targets which are 2 to 3 spaces away. (Note that among units which carry both guns and rocket launchers, the guns will cause more damage per round to a target.) A "kamikaze ability" means that the unit can move into a target and explode, destroying the unit and damaging or destroying the target.

In general, a saboteur will only use its gun under rare circumstances (see section 43: Saboteur).

For infantry, soldier, trooper and troopers units, a kamikaze attack can only be made against accessible, capturable enemy buildings while the building's damage status bar is green or yellow.

A player-controlled saboteur may use a kamikaze attack against enemy buildings, enemy ground units, or sandworms. A Computer-controlled saboteur will only attempt to use a kamikaze attack against player buildings.

- o Weapon usage by trooper(s) or Fremmen units when ordered to attack a target:

1x1-space targets	2x2-space targets	3x2-space targets	3x3-space targets
3210123	32100123	321000123	321000123
+-----+	+-----+	+-----+	+-----+
3|+++R+++|3	3|+++R+++|3	3|++++R+++|3	3|++++R+++|3
2|+RRGR+|2	2|+RRGRR+|2	2|+RRRGRR+|2	2|+RRGRRR+|2
1|+RGGGR+|1	1|+RGGGGR+|1	1|+RGGGGGR+|1	1|+RGGGGGR+|1
0|RGG#GGR|0	0|RGG##GGR|0	0|RGG###GGR|0	0|+RG##GR+|0
1|+RGGGR+|1	0|+RG##GR+|0	0|+RG###GR+|0	0|RGG##GGR|0
2|+RRGR+|2	1|+RGGGGR+|1	1|+RGGGGGR+|1	0|+RG##GR+|0

```

3|+++R+++|3      | 2|+RRRGRR+|2      | 2|+RRGGRRR+|2      | 1|+RGGGGGR+|1
+-----+      | 3|++++R+++|3      | 3|++++R+++|3      | 2|+RRRGRRR+|2
3210123        | +-----+      | +-----+      | 3|++++R+++|3
                | 32100123      | 321000123      | +-----+
                |                |                | 321000123

```

Notes: "1x1-space targets" include ground units, turrets, rocket turrets, wall sections and sandworms. "2x2-space targets" include construction yards and other buildings of equal size; "3x2-space targets" include refineries and other buildings of equal size; "3x3-space targets" include starports and palaces. A "#" indicates a single 1x1-space target, or a 1x1-space section of a larger building; "G" indicates a position relative to the target from where the attacking unit will use a gun/shell-firing weapon; "R" indicates a position relative to the target from where the attacking unit will use a rocket launcher; "+" indicates a position which is too far from the target for an attack by either weapon.

Note that a player-controlled trooper(s) unit will attempt to enter any capturable building which it has been ordered to attack. If a trooper(s) unit cannot enter a capturable building, it will move as close as it can to the building (along a straight path), and then go into Guard mode. If the building remains within the unit's Guard-mode scanning range, the unit may fire on it.

o Weapon usage in attacks on targets by trooper(s) units in Guard mode:

1x1-space targets	2x2-space targets	3x2-space targets	3x3-space targets
3210123	210012	10001	2100012
+-----+	+-----+	+-----+	+-----+
3|+++R+++|3	2|++GR++|2	2|+RGG+|2	2|+++G+++|2
2|+RRGRR+|2	1|+GGGG+|1	1|GGGGG|1	1|+GGGGG+|1
1|+RGGGR+|1	0|GG##GG|0	0|G###G|0	0|+G###G+|0
0|RGG#GGR|0	0|RG##GR|0	0|G###G|0	0|GG###GG|0
1|+RGGGR+|1	1|+GGGG+|1	1|GGGGG|1	0|+G###G+|0
2|+RRGRR+|2	2|++RG++|2	2|+GGR+|2	1|+GGGGG+|1
3|+++R+++|3	+-----+	+-----+	2|+++G+++|2
+-----+	210012	10001	+-----+
3210123			2100012

Notes: "1x1-space targets" include ground units, turrets, rocket turrets, and sandworms. (Note that wall sections are never directly targeted for attack by a unit in Guard mode, and sandworms may or may not be considered targets by a unit in Guard mode, depending on the guarding unit's House.) "2x2-space targets" include construction yards and other buildings of equal size; "3x2-space targets" include refineries and other buildings of equal size; "3x3-space targets" include starports and palaces. A "#" indicates a single 1x1-space target, or a 1x1-space section of a larger building; "G" indicates a position relative to the target from where an attacking trooper(s) unit will use a gun/shell-firing weapon; "R" indicates a position relative to the target from where an attacking trooper(s) unit will use a rocket launcher; "+" indicates a position which is too far from the target for an attack by either weapon.

53. COMPUTER-CONTROLLED FORCES

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o The term "Computer-controlled" in this document refers to the units and buildings manipulated solely by the game/"Computer" in combat or competition with the forces controlled by the human player. The term is not used in reference to any fully autonomous units (such as ornithopters) allied with player forces.

- o Computer-controlled forces are fully established at the start of every mission. Computer units and/or structures will always be located and configured in the same way each time a given mission is started.
- o Computer-controlled forces always "know" where a player House's initial construction yard is located; Computer units can locate it without searching the battlefield.
- o A Computer-controlled House will not expand its bases or change their configuration. If a Computer building is destroyed, the Computer can only replace it at the same location with an identical building. Note that when replacing a destroyed building, the Computer may place the new building over friendly or enemy concrete, and/or any player units located at the site. (Player units at the site are destroyed when this happens.)
- o Computer-controlled bases will not include starports, nor will the Computer attempt to build starports in any mission.
- o The Computer can fix any building under its control.
- o The Computer will not replace destroyed concrete or wall sections.
- o The Computer will use its palace's weapons/abilities whenever possible.
- o In missions where the player faces more than one Computer-controlled House, the various Computer units (including Sardaukar where applicable) will not normally combat each other; They will all attempt to destroy only the player's forces.
- o Computer-controlled forces may capture player-controlled buildings, but such events may be extremely rare.
- o Computer-controlled Houses do not manufacture or use MCVs.
- o Computer-controlled units can be issued new orders more quickly than player units can. Entire groups of Computer units can move and/or attack simultaneously.
- o The Computer can use ground vehicles to overrun a player's soldier, infantry, trooper(s), Fremmen or saboteur units.
- o Computer-controlled units will not directly attack spice blooms.
- o The Computer can make use of all buildings under its control.
- o A player's House will not gain spice/credits by capturing Computer-controlled refineries or silos.
- o A Computer-controlled House may still be able to expend credits after all its refineries and silos are captured or destroyed.
- o Computer-controlled turrets, rocket turrets, and missile tanks may fire on any player ornithopters or carryalls that come within range.
- o Computer-controlled Deviators may attempt to deviate a player's harvesters. The Computer will use deviated harvesters and will unload them in Computer refineries when possible.
- o Computer-controlled Deviators may attempt to deviate a player's MCVs,

although the Computer will not attempt to deploy them. However, if an MCV is deviated while executing a Deploy order, it will deploy a construction yard belonging to the House which controls the Deviator.

- o Computer-controlled units in Guard mode around Computer bases may tend to remain there throughout the game, unless/until they are destroyed. Such units, if led away from their positions, will tend to return to them when possible.
- o If a player unit attacks a Computer-controlled unit, the Computer unit will often return fire if possible. If that player unit then retreats from the encounter, the Computer-controlled unit will tend to pursue it, if possible. If the Computer unit was in Guard mode when it was attacked, it may break off a prolonged pursuit and return to its starting position; If the Computer unit was not in Guard mode, the pursuit can last until either unit is destroyed, or the Computer unit is otherwise prevented from chasing the player unit.
- o If a player's last/only windtrap is destroyed, all player-controlled construction yards will lose the ability to produce anything but concrete and windtraps. Note that this is not true for Computer-controlled construction yards. Computer construction yards may rebuild any destroyed Computer building at any time.
- o Computer-controlled vehicle factories can always build any type of vehicle available to that House during the current mission. Destroying Computer outposts or Hi-Techs will not affect the manufacturing potential of a Computer-controlled vehicle factory.
- o The Computer may not always repair a palace under its control, and/or may not always repair it to full strength.
- o Some captured Computer buildings may require upgrades to reach their full manufacturing potential.
- o In a given mission, two captured Computer-controlled buildings of the same type may have different production capabilities.
- o With the exception of harvesters, Fremmen and MCVs, all player ground units in Guard mode will occasionally "fidget", reorienting themselves (and/or their turrets, where applicable) at random times. Computer-controlled ground units in Guard mode remain motionless, with the possible exception of saboteurs in Area-guard mode.
- o Computer-controlled forces will attempt to harvest and refine spice even if all Computer refineries and silos are filled to capacity.
- o When an infantry unit or a troopers unit is 50% damaged, it will be reduced from a 3-individual group to a single, full-strength individual (an infantry unit is reduced to a soldier; a troopers unit is reduced to a trooper). When this happens, the surviving soldier or trooper may attempt to retreat from combat and return to its point of origin (typically a space adjacent to the barracks which produced the original infantry or troopers unit). While a unit is retreating, it will not return fire if fired upon. If and when the retreating unit reaches its destination, it will stop and go into Guard mode. Note that a retreating player unit can be given new orders at any time, while a retreating Computer unit cannot. (A retreating Computer unit will attempt only to reach its point of origin; Once it stops retreating, it will go into Guard mode and may remain stationary for the rest of the game.)
- o Only a player-controlled House can achieve victory by meeting a spice quota

objective. (Computer-controlled forces can only achieve victory in any mission by defeating player-controlled bases.)

54. SANDWORM

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- o There are no sandworms in missions 1 or 2 (for any House). Sandworms are present in all other missions.
- o All sandworms are identical in coloring and appearance. The presence of a sandworm is indicated by a smooth, circular mound of sand on the Game Screen. The worm itself can be seen only as it strikes a target.
- o Two or more worms may occupy the same space at the same time.
- o A revealed/detected sandworm mound will appear as a white dot on the radar screen.
- o Some sandworms will become active only after being revealed/detected on the battlefield.
- o In general, a sandworm can sense any unit on sand at any distance.
- o A sandworm can devour any ground unit. A worm may also attempt to attack fireballs on sand which are produced by exploding units and projectiles.
- o Sandworms can be clicked on, targeted, and attacked.
- o Clicking on a revealed/detected sandworm mound will display the worm's ID icon and damage status bar.
- o Sand covering a worm will not protect it from damage.
- o A ground unit on top of a sandworm mound can be damaged if other units, turrets or rocket turrets are firing on (and hitting) the sandworm. A worm may move back and forth between firing units, pausing beneath them without striking, as the units above take damage from weapon fire.
- o Sandworms cannot permanently affect terrain or unharvested spice.
- o A sandworm mound will always be composed of plain, smooth sand. As a worm moves under spice fields, spice blooms, dunes and sand craters, those terrain features will be obscured by the sandworm mound, but reappear if the worm moves away.
- o A sandworm will disappear if it devours 3 units or is destroyed. A worm may also disappear when it becomes 50% damaged.
- o Sandworms can move under/through spice blooms without triggering them.
- o If a spice bloom is detonated while a sandworm is occupying the same space, the worm is destroyed.
- o A Devastator ordered to self-destruct will not explode if it is swallowed by a sandworm.
- o A self-destructing Devastator can damage nearby sandworms.
- o Turrets, rocket turrets, and units in Guard mode may automatically fire on any sandworm which comes into range. This auto-targeting ability will vary by House and mission number.

- o Ordos and Harkonnen units in Guard mode will fire on any sandworms that come within range.
- o Solid projectiles may be fired over sandworms without striking them. Sonic blasts directed at another target will damage intervening sandworms.
- o A ground unit moving across sand will usually attempt to navigate around any sandworm mound in its path.

55. SARDAUKAR

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- o In this document, the term "Sardaukar" refers to the combat forces of the Emperor. They first appear in mission 4 as troopers units transported by carryall. In later missions, Sardaukar units may be of any unit type available to any House, excluding Deviators, Fremmen, MCVs, raider trikes and saboteurs.
- o Before mission 9, the Sardaukar will have no base located on the battlefield.
- o Purple is the House color for all Sardaukar forces.
- o A captured Sardaukar vehicle factory can produce trikes, quads, harvesters, MCVs, combat tanks, missile tanks, siege tanks, and 1 or more special units. These special units vary depending on the capturing House: Devastators are produced for Atreides, Devastators and sonic tanks for Ordos, sonic tanks for Harkonnen. (Note that the capturing House must also control a Hi-Tech in order to produce special units.)
- o Mentats may refer to the Sardaukar as "Sarduakar".

56. END MISSION

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- o If all player or Computer buildings are destroyed or captured, the mission will end. Note that turrets and rocket turrets are excluded from consideration here.
- o A player will lose a mission if all friendly buildings are destroyed. This is true even if the player still has one or more MCVs available to create new construction yards.
- o If both/all sides in combat lose all of their buildings, the Computer enemy wins by default. The player must always hold at least one building (other than a turret or rocket turret) at the end of a mission in order to win.
- o The end of a mission is first signified by an overflight of 7 carryalls in a V formation. The carryalls will be trimmed in the House color of the victorious side.
- o Time elapsing while the game is paused is not applied to the "TIME" value on the score screen at the end of a mission.
- o The game will not keep track of harvested spice beyond 65,000 credits.
- o If units destroy friendly buildings, the buildings are counted as being destroyed by the enemy.
- o When a destroyed ground vehicle produces a surviving soldier, both the destroyed vehicle and the soldier are scored as separate units.

- o Concrete and wall sections are not counted in scoring.
- o When a Devastator self-destructs, it is counted as being destroyed by the enemy.
- o Sandworms are counted as enemy units in scoring. A sandworm is counted as being destroyed whether the sandworm is destroyed/driven away, or disappears after consuming three units.
- o Units eaten by sandworms are not counted as being destroyed by the enemy.
- o Units destroyed by spice blooms are not counted as being destroyed by the enemy.
- o When a unit composed of three individuals (such as an infantry or troopers unit) is reduced to a single individual, the two destroyed individuals are not counted in scoring.
- o Captured buildings are not counted as being destroyed.
- o Deviated units do not count as being destroyed.
- o Spice collection and processing may continue even after all refineries and silos are full. No credits are gained from the processing of excess spice, and the excess spice itself is lost (although the excess spice is counted in scoring).
- o When a mission is over, a rank is assigned to the player. Ranks, listed in alphabetical order: BASE COMMANDER, DESERT MONGOOSE, DUNE TROOPER, OUTPOST COMMANDER, RULER OF ARRAKIS, SAND SNAKE, SAND WARRIOR, SCOURGE OF DUNE, SQUAD LEADER.
- o Following successful completion of mission 9, a brief ending sequence shows Arrakis from space, its color changing to the victor's House color (this is where the PLANET SHIMMER soundbite is used). Following this are the game credits. If MUSIC IS ON, the credits are accompanied by a musical score that includes sound effects from the game.
- o Game credits can only be interrupted with the power switch or reset button until they have played through one time. After the first run-through, the credits will begin to repeat. From this moment on, pressing the A, B or C button will interrupt the credits and restart the game from the opening sequence.

57. CHEAT CODES

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- o In this game, built-in cheat codes are enabled through the use of special "invalid" passwords. To enable a code, enter the appropriate password on the Password Screen and select "END" once. (If SOUND IS ON, the INVALID SELECT or SCREAM soundbite is played.) Press the Start button to exit the Password Screen, or use the "<" (left-arrow symbol) to reverse over the password, then enter another cheat-code password or mission password. (Multiple codes may be activated or toggled without exiting the Password Screen.)
- o Cheat code passwords and functions:

LOOKAROUND: Battlefield is always viewable on Game Screen (can be toggled)
PLAYTESTER: Player units/buildings are immune to most damage (can be toggled)
SPLURGEOLA: Set player's spice/credit level in the current mission to 25,000

Notes: The LOOKAROUND and PLAYTESTER codes may be "toggled": Entering the password once will turn the code on, entering the password again will turn it off. (While a cheat-code password is visible on the Password Screen, it can also be toggled on and off each time END is selected.)

Once invoked, the LOOKAROUND and PLAYTESTER codes remain active until toggled off, or until the game system is reset or powered off. Starting new games, quitting games in progress, entering mission passwords, or choosing different Houses will not deactivate the LOOKAROUND or PLAYTESTER codes.

When the LOOKAROUND code is first invoked, some dark areas may remain on the Game Screen. These areas can be redisplayed correctly by scrolling the view away to another part of the battlefield, then returning.

The LOOKAROUND code affects only the Game-Screen view, it does not actually reveal the battlefield to player-controlled forces, and will not change what player units can see, detect, or attack on the battlefield. The code also will not affect what appears on the radar screen. (The radar screen can only display what has been revealed/detected by player-controlled forces.)

While the LOOKAROUND code is active, enemy buildings will not display beacons (rotating lights) unless the beacons themselves have been revealed/detected by player-controlled forces.

The PLAYTESTER code affects player-controlled buildings and units, including buildings which are captured by player forces, and buildings and units which are produced at those captured buildings. The code also protects Computer units which have been deviated to player control (protection will last until the deviation effect wears off).

While the PLAYTESTER code is active, player buildings are protected from all damage caused by weapons, saboteurs, erosion, lack of power, and nearby explosions; Player-controlled units are protected from most weapon attacks, saboteurs, and damage from nearby explosions, and will also be immune to the movement-related decay that occasionally afflicts some units.

The PLAYTESTER code cannot protect all player structures and units from all types of damage. Specifically, the code will not prevent construction damage when a new building is placed on rock, and will not protect concrete or wall sections; Units may still be consumed by sandworms, and will be destroyed by touching spice blooms; Player soldier, infantry, trooper(s) and saboteur units may still be overrun and crushed by enemy vehicles; Player Devastators can still self-destruct; Player saboteurs will still explode on contact with a target, or when replaced by new saboteurs. The code cannot prevent player units from becoming deviated, and will not protect deviated player units unless/until they revert back to player control. Finally, the code will not protect any Fremmen units which are allied with player forces.

The SPLURGEOLA password will only be effective when entered during a mission in progress; Entering this password at any other time will have no effect. Starting new games, quitting games in progress, entering mission passwords, or choosing different Houses will cancel all effects of the SPLURGEOLA code. When the SPLURGEOLA code is invoked, the quantity of stored spice for the player's House is instantly set to 25,000 units, and the credit display will begin to change accordingly until it accurately represents the current spice level. (Note that the credit display may take several seconds to adjust; but because financial transactions are based on stored spice, a player may spend up to 25,000 credits as soon as the code is invoked.) If the player's House controls fewer than 25 friendly storage facilities when the code is invoked, then the code will also raise the total combined storage capacity of those facilities to 25,000 units. (To exceed this capacity a House must control 26 or more storage facilities, because total storage capacity for a House is dynamically divided equally among all friendly storage facilities as they are built, captured, or destroyed.)

Any effects of the SPLURGEOLA code are cancelled if a player's last/only storage facility is destroyed.

Spice provided by the SPLURGEOLA code will not be counted in scoring at the end of the mission.

- o Pressing the Reset button, or powering off the game console, will immediately deactivate any active cheat codes.

58. GLOSSARY

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- o BASE: The term "base" generally refers to any tightly clustered group of varying types of structures, all under the possession/control of one House.
- o BATTLEFIELD: The term "battlefield" refers to the entire combat area available in a given mission, including both terrain and airspace. (The Game Screen shows a rectangular section of the battlefield, 10 spaces horizontally by 7 spaces vertically.)
- o BUILDING: The term "building" (as a noun) refers to any structure, excluding concrete slabs and wall sections.
- o CLICKING ON/CLICK ON: The term "clicking on" refers to placement of the Selection Cursor (or Targeting Cursor) over a structure, ground unit, etc. during game play, and pressing the A button once.
- o COMPUTER-CONTROLLED/COMPUTER: The term "Computer-controlled" refers to the units and buildings manipulated solely by the game/"Computer" in combat or competition with the forces controlled by the human player. The term is not used in reference to any fully autonomous units (such as ornithopters) allied with player forces.
- o CONCRETE SLAB/QUADRANT OF A CONCRETE SLAB: The term "concrete slab" refers to the full-sized slab as it is produced at a construction yard. Each full-sized concrete slab is composed of 4 smaller squares, or "quadrants", arranged in a 2x2 matrix.
- o ENEMY: The term "enemy" generally refers to units and/or structures which are controlled by an opposing House. (For example, an Atreides construction yard is an "enemy structure" to House Ordos or House Harkonnen.)
- o FRIENDLY: The term "friendly" generally refers to units and/or structures which are all controlled by the same House. (For example, an Atreides construction yard is a "friendly structure" to House Atreides.)
- o GAME TIME: The term "Game Time" refers to time as it elapses within the game environment. Game Time generally slows down with an increase in units on the battlefield, speeds up with a decrease in units, and is suspended whenever the Game Screen is not displayed. Game Time may also slow down when units on the battlefield experience difficulty in carrying out orders.
- o HOUSE COLOR: The term "House color" refers to the prevalent color of building beacons and/or units on the Game Screen. It also refers to the color of buildings and/or ground units on the radar screen. House colors are blue for Atreides, green for Ordos, red for Harkonnen, and purple for the Sardaukar forces of the Emperor.
- o ICON: The term "icon" refers to any one of the Identification ("ID") Window or Command Window images which appear on the upper right side of the Game Screen during play.
- o PLAYER-CONTROLLED/PLAYER: The term "player-controlled" refers to the units and structures manipulated by the human player in combat or competition with the forces controlled solely by the game/"Computer". The term may also be used in reference to any fully autonomous units (such as ornithopters) allied

with player forces.

- o RANGE: The term "range" refers to the maximum linear distance between two points on a horizontal or vertical line. This distance is measured in "spaces", where 1 space is an area equal in size and shape to 1 quadrant of a concrete slab. (See the examples of range under sections 19: Rocket Turret, 22: Turret, 43: Saboteur, and 52: Multiple-Weapon Units.)
- o REVEAL RANGE: The term "Reveal Range" refers to the largest area of the battlefield that a player-controlled object will reveal when it is placed on the battlefield, moves, or fires. It also refers to the largest area of the battlefield that a Computer-controlled object will reveal when it fires.
- o REVEALED: The term "revealed" refers to an area or object which is visible on the battlefield as a result of being detected by player-controlled forces. If RADAR IS ON, all revealed friendly buildings are represented on the radar screen. If the radar screen is supported by a fully-powered outpost, then all revealed sand and rock, and most revealed objects will also be represented on the radar screen.
- o SARDAUKAR: The term "Sardaukar" refers to the combat forces of the Emperor. They first appear in mission 4 as troopers transported by carryall. In later missions, Sardaukar units may be of any unit type, excluding Deviators, Fremmen, MCVs, raider trikes and saboteurs.
- o SPACE: The term "space" refers to a unit of measurement where 1 space is an area equal in size and shape to 1 quadrant of a concrete slab.
- o SQUARE: The term "square" (in reference to a structure's size and/or placement grid) refers to a unit of measurement where 1 square is an area equal in size and shape to 1 quadrant of a concrete slab.
- o STORAGE FACILITY: The term "storage facility" refers to a building which may contain spice. Refineries and silos are both storage facilities.
- o STRUCTURE: The term "structure" refers to any construction yard, and to anything that can be produced at a construction yard.
- o UNIT: Unless otherwise specified, the term "unit" generally refers to any mobile component of any House's combat, harvesting or support force. The term "airborne units" in this document refers specifically to all carryalls, frigates and ornithopters.
- o UNREVEALED: The term "unrevealed" refers to an area or an object which is undetected, hidden, or "blacked out" on the battlefield. Unrevealed areas and objects will not appear on radar.

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