

MASTER OF ORION

Technical Supplement and Reference

Our **Master of Orion** package should contain this technical supplement, a manual with registration card, and a set of four 3.5" floppy disks.

Computer: IBM, or fully compatible, with 16 Mhz 386 processor or better.

System Memory: 2 MB of RAM, with 700K of EMS free.

Conventional Memory: 575K (588,800 bytes) of your base RAM must be available.

Hard Drive: at least 14 MB of free space must be available on your hard drive.

Graphics: VGA graphics card and VGA monitor. Floppy Drive: One 3.5" required for installation only. DOS: MS-DOS version 3.0 or higher required.

Optional:

Mouse: Microsoft Mouse or compatible highly recommended.

Sound Cards: Sound Blaster, Ad-Lib, Pro-Audio Spectrum, or Roland MT-32 sound cards.

Master of Orion includes a program to install the game onto your hard drive. To run this program:

1. Start up your computer normally.
2. Insert the first **Master of Orion** disk into your 3.5" floppy disk drive.
3. Type A: or B: (whichever refers to the drive with your disk), and press the Enter key.
4. Type INSTALL, then press the Enter key. Follow the on-screen prompts.

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INSTALLATION (CONT)

The main menu of the INSTALL program has four options:

Install Game Files to Hard Disk: Will decompress and copy the game files from your floppy disks onto a directory that you specify on your hard drive. Because the files on the floppy disk are compressed, you **MUST** use this option to copy the game files to your hard drive.

Reconfigure Hardware Options: Allows you to configure hardware settings for your sound card and interface. The highlighted menu options are the ones that the INSTALL program believes are available in your system. You may still select settings that are greyed out. Generally, the farther down the menu, the more advanced the sound system.

If the sound device you have selected requires specific configuration settings for address, IRQ, and/or DRQ, it will request them. The Install program will try to preselect the options it believes are correct for your system. Check the documentation that came with your sound card, and any notes on the settings used for address, IRQ, and/or DRQ when you installed the card in your computer. If you do not set these correctly, you may not hear the correct sound and music, or possibly **Master of Orion** may not run at all.

After setting options for sound drivers, you may configure the interface for either mouse or keyboard usage. We highly recommend using a mouse with **Master of Orion**.

Display README.TXT file: The README.TXT file contains information too recent to be included in the manual or this Technical Supplement.

Exit to DOS: leaves the INSTALL program, ready to play **Master of Orion**. If you later need to change your hardware settings, or read the README.TXT file, you can run the INSTALL program again from your hard drive.

NOTE: As part of its auto-detection routines, the INSTALL program checks for any installed sound cards. Certain sound cards may cause your computer to lock up when this routine runs. If you experience this problem, you may run the INSTALL program without checking for sound cards by typing `INSTALL -S` instead of just `INSTALL`. This bypasses the check, and lets you select any sound card in the menu. Be careful to use the right settings.

Master of Orion requires that 575K (588,800 bytes) of your conventional RAM be available. To check how much RAM you have available, type MEM and press Enter.

The memory report shows a number for the “largest executable program size”. If that is less than 588,800 bytes, you may have to modify your system configuration to remove some memory resident programs that take up that space.

Once **Master of Orion** is properly installed and configured on your hard drive, you are ready to play the game. Change to the subdirectory containing Master of Orion. If you installed with the default options, you would type:

CD C:\MPS\ORION

then press Enter. Once you are in the correct subdirectory, then you type:

ORION

and press Enter to begin the game.

Your goal in **Master of Orion** is nothing less than conquest of the galaxy. To do this, you must:

- Use the resources of your planets to develop their industry, defense, research, ecology, and ship production.
- Send out ships to discover and colonize new planets.
- Deal with other races that you encounter in space through diplomacy, trade, espionage, sabotage, and warfare.
- Research new technologies in Computers, Force Fields, Planetology, Construction, Propulsion, and Weapons.
- Design new ships with new technologies, to aid you in accomplishing your goals.

If this is your first game, we recommend that you play in a Medium sized galaxy (not Small), at Simple difficulty, with 3 other Races. Play as either the Alkaris, Sillicoids, or Klackons; they are the easiest for new players.

MEMORY REQUIREMENTS

STARTING THE GAME

PLAYING MASTER OF ORION

YOUR FIRST GAME

ONLINE HELP

GAME CONTROLS

Most game screens in Master of Orion have built in help displays to explain the controls. To see the help displays for any screen, press the F1 Function key on your keyboard.

We highly recommend the use of a mouse to play Master of Orion. The left mouse button is always used to select an option, and the right mouse button to cancel a selection.

The numeric keypad can be used instead of a mouse, to move the pointer. Be sure that the Numlock is turned on. Pressing Enter selects an option, and pressing the **Esc** key cancels a selection. To scroll the game map, hold down the **Ctrl** key while pressing the numeric keys.

Most buttons on screen can be activated by pressing the keyboard key corresponding to the first letter of the button's name. There are a few exceptions to this rule:

Main Screen: RELOCATE = 'L' TRANSPORT = 'X'

Fleet Screen: SPECS = 'V'

Combat: SPECIAL = 'X'

Many screens: ↓ (down arrow) = '<' ↑ (up arrow) = '>'

F1 = online help.

F2 = next planet.

F3 = previous planet.

THE MAIN SCREEN

The main game screen includes a large window displaying a portion of the galaxy, a right side panel with planetary information and/or control displays, and a row of buttons at the bottom of the screen to access other control and information screens.

In the galaxy window, you can select stars or fleets of ships. If you select a star that you have colonized, the right panel can be used to allocate its resources, build ships in its docks, relocate completed ships to other colonies, or transfer population to other star systems. If you click again on an already selected star system, the display will change to show you more information about that star.

If you select a star that you have not colonized, the right panel displays what information you have about that star system.

If you select a fleet orbiting a planet, the right panel lets you order ships from that fleet to other star systems. If you select a fleet already in space, the panel displays its composition, destination, and ETA.

You control the allocation of your planetary spending, and the distribution of your research efforts, using ratio bars. A group of ratio bars shows how a resource is being divided among several different areas. The total value of all the bars must always equal 100% of the resource being allocated. Therefore, if you reduce one bar, another will lengthen; lengthen a bar, and another must get shorter.

To change the setting of a ratio bar, you simply click in the bar area at the position you want the setting to be. Other bars will change their settings to compensate, so that the total values of all the bars still adds up to 100%. You may have finer control over bar settings by pressing the arrows on the left and right of the bars, or by using + and - keys when the ratio bar is selected.

If you wish to lock down a bar's setting, so that changing other ratio bars does NOT affect its setting, click on the bar's title, at the left of the bar you wish to lock. The title will change colour, and changing ratios in other bars cannot affect the locked bar's resources. You can unlock the ratio bar setting by clicking on the title again.

Buttons at the bottom of the Main screen access other screens with more detailed information and control displays:

Game: lets you save and load games, change settings for sound, and quit the game.

Design: lets you design new types of ships. You can have no more than six types of ships active at any one time.

Fleet: shows you where all of your ships are, what their specifications are, and lets you choose any ship types to scrap to make room for newer designs.

Map: displays an overview of the entire galaxy.

Races: controls your interactions with other races you have contacted. Here you can speak to their ambassadors, send out spies, and see how your race stands compared to others.

Planets: summarises information about all of your colonies, and your empire's economic status.

Tech: shows you the technological advances you have, and allows you to set the ratios for your six areas of research.

Next Year: ends this turn, and sends the game onto the next one.

RATIO BARS

OTHER GAME FUNCTIONS

TECHNOLOGY DEVELOPMENT TABLE

Technology Level	Computers	Construction	Force Fields
1.	Battle Computer Mark I	Titanium Armour	Class I Deflector Shield
2.	ECM Jammer Mark I		
3.		Improved Industrial Tech 9	
4.	Deep Space Scanner		Class II Deflector Shield
5.	Battle Computer Mark II	Reduced Industrial Waste 80%	
6.			
7.	ECM Jammer Mark II		
8.	Improved Robotic Controls III	Improved Industrial Tech 8	Personal Deflector Shield
9.			
10.	Battle Computer Mark III	Duralloy Armour	Class III Deflector Shield
11.		Battle Suit	
12.	ECM Jammer Mark III		Class V Planetary Shield
13.	Improved Space Scanner	Improved Industrial Tech 7	
14.		Automated Repair Units	Class IV Deflector Shield
15.	Battle Computer Mark IV	Reduced Industrial Waste 60%	
16.			Repulsor Beam
17.	ECM Jammer Mark IV	Zortrium Armour	
18.	Improved Robotic Controls IV	Improved Industrial Tech 6	
19.			
20.	Battle Computer Mark V		Class V Deflector Shield
21.			Personal Absorption Shield
22.	ECM Jammer Mark V		Class X Planetary Shield
23.	Advanced Space Scanner	Improved Industrial Tech 5	
24.		Armoured Exoskeleton	Class VI Deflector Shield
25.	Battle Computer Mark VI	Reduced Industrial Waste 40%	

Technology Level	Computer Tech	Construction Tech	Force Fields
26. 27. 28. 29. 30.	ECM Jammer Mark VI Improved Robotic Controls V Battle Computer Mark VII	Andrium Armour Improved Industrial Tech 4	Cloaking Device Class VII Deflector Shield
31. 32. 33. 34. 35.	ECM Jammer Mark VII Hyperspace Communications Battle Computer Mark VIII	 Improved Industrial Tech 3 Tritanium Armour Reduced Industrial Waste 20%	Zyro Shield Class XV Planetary Shield Class IX Deflector Shield
36. 37. 38. 39. 40.	ECM Jammer VIII Improved Robotic Controls VI Battle Computer Mark IX	Advanced Damage Control Improved Industrial Tech 2 Powered Armour	Stasis Field Personal Barrier Shield Class XI Deflector Shield
41. 42. 43. 44. 45.	ECM Jammer Mark IX Battle Computer Mark X	Adamantium Armour Industrial Waste Elimination	Class XX Planetary Shield Black Hole Generator Class XIII Deflector Shield
46. 47. 48. 49. 50.	Oracle Interface ECM Jammer Mark X Improved Robotic Controls VII Technology Nullifier Battle Computer Mark XI	 Neutronium Armour	Lightning Shield Class XV Deflector Shield

Technology Level	Planetology	Propulsion	Weapons
1.	Ecological Restoration	Retro Engines (Warp 1)	Lasers and Nukes
2.	Terraforming +10		Hand Laser
3.	Controlled Barren Landings	Hydrogen Fuel Cells (Range 4)	
4.			Hyper-V Rockets
5.	Improved Eco Restoration	Deuterium Fuel Cell (Range 5)	Gatling Laser
6.	Controlled Tundra Landings	Nuclear Engines (Warp 2)	Anti-Missile Rockets
7.			Neutron Pellet Gun
8.	Terraforming +20		Hyper-X Missile
9.	Dead Planet Landings	Iridium Fuel Cells (Range 6)	Fusion Bomb
10.	Death Spores	Inertial Stabilizer	Ion Cannon
11.			Scatter Pack V Rockets
12.	Controlled Inferno Landings	Sub-Light Drive (Warp 3)	Ion Rifle
13.	Enhanced Eco Restoration		Mass Driver
14.	Terraforming +30	Dotomite Crystals (Range 7)	Merculite Missiles
15.	Controlled Toxic Landings		Neutron Blaster
16.	Soil Enrichment	Energy Pulsar	Anti-Matter Bomb
17.	Bio Toxin Antidote		Graviton Beam
18.	Radioactive Landings	Fusion Drive (Warp 4)	Stinger Missiles
19.		Uridium Fuel Cells (Range 8)	Hard Beam
20.	Terraforming +40	Warp Dissipator	Fusion Beam
21.	Cloning		Ion Stream Projector
22.	Atmospheric Terraforming		Omega-V Bomb
23.		Reajax II Fuel Cells (Range 9)	Anti-Matter Torpedoes
24.	Advanced Eco Restoration	Impulse Engines (Warp 5)	Fusion Rifle
25.			Megabolt Cannon

Technology Level	Planetology	Propulsion	Weapons
26. 27. 28. 29. 30.	Terraforming +50 Doom Virus Advanced Soil Enrichment	Star Gates Trilithium Crystals (Range 10) Ion Drive (Warp 6)	Phasor Scatter Pack VII Rockets Auto Blaster Pulson Missile Tachyon Beam
31. 32. 33. 34. 35.	Terraforming +60 Complete Eco Restoration	High Energy Focus	Hand Phasor Gauss Auto Cannon Particle Beam Hercular Missiles Plasma Cannon
36. 37. 38. 39. 40.	Universal Antidote Terraforming +80 Bio Terminator	Anti-Matter Engines (Warp 7) Sub space Teleporter Ionic Pulsar	Distruptor Pulse Phasor Neutronium Bomb Hellfire Torpedoes
41. 42. 43. 44. 45.	Advanced Cloning Terraforming +100	Thorium Cells (Unlimited Range) Interphased Drive (Warp 8) Sub Space Interdictor Combat Transporters	Zeon Missiles Plasma Rifle Proton Torpedoes Scatter Pack X Missiles Tri-Focus Plasma
46. 47. 48. 49. 50.	 Terraforming +120	Inertial Nullifier Hyper Drive (Warp 9) Displacement Device	Stellar Convertor Neutron Stream Projector Mauler Device Plasma Torpedoes

WEAPONS TABLES

BEAM WEAPONS						
Weapons	Level	Damage	Cost	Size	Power	Notes
Laser	1	1-4	3	10	30	
Heavy Laser	1	1-7	9	30	90	2 space range
Gatling Laser	5	1-4	9	20	70	fires 4 times per turn
Neutron Pellet Gun	7	2-5	3	15	25	halves enemy shield strengths
Ion Cannon	10	3-8	4	15	35	
Heavy Ion Cannon	10	3-15	11	45	105	2 space range
Mass Driver	13	5-8	9	55	50	halves enemy shield strengths
Neutron Blaster	15	3-12	6	20	60	
Heavy Blast Cannon	15	3-24	18	60	180	2 space range
Graviton Beam	17	1-15	6	30	60	damage carries over from one target to another
Hard Beam	19	8-12	12	50	100	halves enemy shield strengths
Fusion Beam	20	4-16	7	20	75	
Heavy Fusion Beam	20	4-30	21	60	225	2 space range
Megabolt Cannon	25	2-20	8	30	65	+3 levels to hit
Phasor	26	5-20	9	20	90	
Heavy Phasor	26	5-40	26	60	270	2 space range
Auto Blaster	28	4-16	14	30	75	fires 3 times per turn
Tachyon Beam	30	1-25	9	30	80	damage carries over from one target to another
Gauss Autocannon	32	7-10	28	105	105	fires 4 times per turn, halves enemy shields
Particle Beam	33	10-20	15	90	75	halves enemy shield strengths
Plasma Cannon	35	6-30	12	30	110	
Disruptor	37	10-40	21	70	160	2 space range
Pulse Phasor	38	5-20	25	40	120	fires 3 times per turn
Tri-Focus Plasma	45	20-50	25	70	180	
Stellar Converter	46	10-35	50	200	300	3 space range/hits all four shields
Mauler Device	48	20-100	55	150	350	

BOMBS AND BIOLOGICALS

Weapons	Level	Damage	Cost	Bombs	Size	Power	Notes
Nuclear Bomb	1	3-12	3	10	25	0	
Fusion Bomb	8	5-20	4	10	25	0	
Death Spores	10	1 population	10	5	50	0	biological weapon
Anti-Matter Bomb	16	10-40	5	10	50	0	
Omega-V Bomb	22	20-50	8	10	75	0	
Doom Virus	27	2 populations	15	5	100	0	biological weapon
Neutronium Bomb	39	40-70	10	10	90	0	
Bio Terminator	40	3 populations	20	5	150	0	biological weapon

MISSILES AND TORPEDOES									
Weapons	Level	Dmg	Cost	Size ¹	Power ¹	Bonus	Speed ²	Range ³	Notes
Nuclear Missiles	1	4	7	50	20	0	2	4	
Hyper-V Rockets	4	6	9	70	20	0	2.5	5	
Hyper-X Missiles	7	8	12	100	20	+1	2.5	4	
Scatter Pack V Rockets	11	6	18	115	60	0	2.5	5	splits into five warheads
Merculite Missiles	14	10	13	105	20	+2	3	6	
Stinger Missiles	18	15	19	155	30	+3	3.5	7	
Anti-Matter Torpedoes	23	30	30	75	300	+4	4	8	
Scatter Pack VII Missiles	27	10	28	230	50	+2	3	6	splits into seven warheads
Pulson Missile	29	20	20	160	40	+4	4	8	
Hercular Missiles	34	25	26	220	40	+5	4.5	9	
Hellfire Torpedoes	40	25	50	150	350	+6	5	10	hits all four shields
Zeon Missiles	41	30	30	250	50	+6	5	10	best missile for missile bases
Proton Torpedoes	43	60	50	100	400	+6	8	10	
Scatter Pack X Missiles	44	15	30	250	50	+3	3.5	7	splits into ten warheads
Plasma Torpedoes	50	150	150	150	450	+7	6	10	loses 15 strength/space

1. Values for size and power apply to 2 rack missile launchers. Five rack launchers are 50% larger and more expensive than 2 rack launchers.

2. Two rack missiles have a +1 speed bonus and +2 range.

3. Planetary missile base launchers have double the normal range.