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Installing Ultrabots

Experienced computer users: To install the game to your hard disk, simply run the INSTALL program on Disk 1 (EX: install a: c:). Follow the screen prompts, and then skip down to page 6.

Less experienced users: Read the instructions in the next section for a step-by-step guide through the installation process.

ULTRABOTS comes on two high density 5.25 inch disks, or two high density 3.5 inch disks. To install *ULTRABOTS* on your hard drive, follow these instructions:

1. Boot your computer with MS-DOS (Version 3.3 or higher).
2. Place Disk 1 into a high density disk drive. Type the name of the disk drive (example: a:) and press ENTER.
3. Type install, followed by the name of the floppy drive you've placed the disk in, then the name of the drive you wish to install the game onto.
   Example: If you've placed the disk in drive A:, and you wish to install the game to drive C:, type install a: c: and press ENTER. Be sure to include the spaces!
4. When Disk 1 has been installed, the program requests Disk 2. Remove Disk 1 from the floppy drive, and insert Disk 2, then press ENTER.

The game is installed into a subdirectory called ultra.

NOTE: When installed, Ultrabots takes up approximately 2.5 MB of hard disk space.

Loading Ultrabots

1. From the root directory (usually C:), type cd\ultra.
2. Type ultra. The first Set-Up screen appears with a list of several computer types.
3. *Ultrabots* looks to see what type of computer you have and chooses it for you in the list. To accept this choice, press ENTER. To choose another computer type, use the UP/DOWN Arrow keys to move through the list, and press ENTER when you've made your choice.
4. Follow the above instructions to set-up your Graphics Type, Music Type (or choose No Music), and Sound Type (or choose No SOUND).

   NOTE: If you are NOT using a memory manager (EMM386 and QEMM are two of the most popular) and, therefore, are not using EMS or XMS memory, you MUST select the NO SOUND option in the Sound menu for *Ultrabots* to work. You must also select NO SOUND if you are running Ultrabots on a PS/2 computer with no sound card. If you are running *Ultrabots* on a 16MHz computer and you want the game to run a little faster, you should select the NO MUSIC and NO SOUND options in the Set-Up menus.

When you have finished setting up the program, the introduction begins. To bypass the introduction, press any key or click the mouse.

5. At the Login screen, type in a name.

Login Screen

NOTE: Your campaign in progress is automatically saved using the name you type at the Login screen. To resume a game in progress, type the name you used for that game. To begin a new game, type a different name. To see a list of available games, type dir *.log at the C:\ULTRA prompt.

The Main Menu (Map Room) appears. For instructions on using the main menu, see page 10.

Changing set-up options

Whenever your hardware configuration changes in any way (i.e. you install a new graphics or sound card, etc.), we recommend that you run the Set-Up program again to insure proper performance from your game. To access the Set-Up program for this or any other reason, type setup at the c:\ultra prompt, and press ENTER.

SAVING AND RESTORING

Your campaign in progress is automatically saved using the name you type at the login screen. To resume a game in progress, enter (at the login screen) the name you used for that game. This way you can play several campaigns simultaneously, under different login names.

YOUR MISSION

As of this writing, the second alien invasion has been in full force for two years. Enemy bases pop up like weeds, usually faster than we can knock them down. Each one commands an army of mindless killing machines bent on the destruction of humanity. Those who care to speculate believe they're here to clear the way for a colony of alien beings, probably tucked away safely in their mother ship, awaiting word that Earth has fallen. With a little luck and a lot of help from men and women like you, that news flash won't get through.

As an Ultrabot Commander, you are one of the few with the skill and training necessary to take control of a fleet of Ultrabots and lead them into victory. From your Situation Room deep within the Ultrabot Basecamp, you'll command dozens of 'bots on thirteen different missions across the globe. Using the best tactical, sensory, and communications equipment available, you'll wipe out base after base of alien 'bots and free the Earth once again.

On each mission, your ultimate goal is always to destroy the enemy basecamp. This can sometimes be accomplished without destroying all enemy 'bots in the area, but that's a judgment call only the commander can make. Attacking enemy units and their basecamp, as well as defending your own base and network, requires large amounts of power. Units can survive away from the network only a short period of time before running out of battery power, at which time they are forced to return to net proximity. Net builders can extend and enlarge the net by dropping net relays around its perimeter. For more information on net expansion, see *Net Strategies,* page 78.

We strongly suggest that you become familiar with the information in this manual. You're on your own out there, and it won't be easy, but we've attempted to provide you with all the basic information you'll need to successfully carry out your missions. Good luck, Commander.

Map Room

From the Map Room (main menu) you can view the three Ultrabot models, select a scenario to play, play a Training scenario, abort the current game to begin a new one, or quit the game and return to DOS. Below is a complete description of each of these options. While in the Map Room, currently active scenarios are paused until you return to play.

Your name

Score

Map

Occupied areas
(click to select a scenario)

View 'Bots

Play selected scenario

Start a new game

Play a Training scenario

Return to DOS

Map Room

The Map

The map covers all of occupied Earth. Each red cross on the map represents an occupied area; crosses with circles around them represent scenarios that are ready for action. Blue crosses represent scenarios where enemy forces have been defeated. Move the cursor to one of these crosses and click the LEFT mouse button for the location and alert level of the scenario.

Colored circles around scenario markers on the map represent the *alert level* of the scenario. Alert level refers to the strength of the enemy basecamp. There are four possible alert levels: green, yellow, red, and critical — green being the easiest and critical being the most difficult basecamp to destroy.

> NOTE: While playing a scenario, the alert levels of other scenarios may increase (i.e. a scenario that was on green alert when you began your current scenario may be on red by the time you *complete* the current scenario).

To play the selected scenario, click on PLAY, or see the instructions under *Play* on page 13.

Review

The REVIEW option lets you view each of the 'bots you'll command. Click on NEXT UNIT to cycle through the 'bots, or EXIT to return to the Map Room.

Map Room

'Bot description

Physical Specifications

Current 'Bot

Available Weaponry

See the next 'Bot

Return to the Map Room

Map Room

Play
When you've had some time to practice (see *Train*), it's time for the real thing. Each available scenario on the map is represented by a red cross surrounded by a circle. Move the cursor to the scenario you want to play, then:

1. Click the LEFT mouse button to select the scenario.
2. Click on PLAY. The Situation Room appears and you are in control. For more information on the Situation Room, see page 17.

More scenarios become available as you complete each scenario.

NOTE: Once you have begun a scenario, the TRAIN option is unavailable until you complete the scenario (either by winning or losing). To access TRAIN during a scenario, return to the Map Room and click on NEW, then enter a new name at the Login screen.

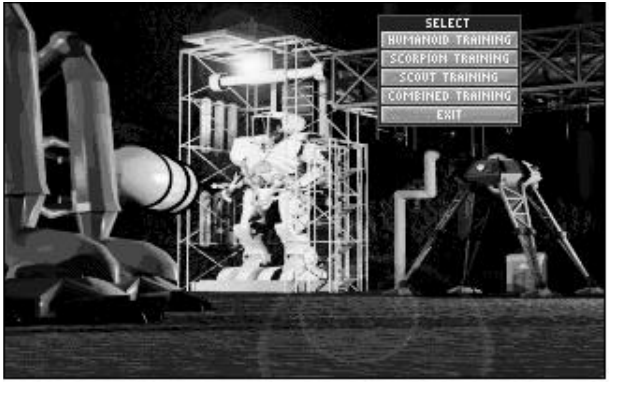
New
NEW takes you back to the Login screen where you can enter a new name to play a new game. Return to an old scenario in progress by re-entering the original name at the Login screen.

Train
Train allows you to practice controlling each of the Ultrabot models. In the training scenarios you've got nothing to lose, so get in there and blast away.

Map Room

To TRAIN:

- At the main menu (Map Room), click on TRAIN. The Training menu appears:



Training Menu

Map Room

- Choose one of the following options:

HUMANOID TRAINING:	Practice controlling the Humanoid Ultrabot
SCOUT TRAINING:	Practice controlling the Scout Ultrabot
SCORPION TRAINING:	Practice controlling the Net Builder (a.k.a. Scorpion) Ultrabot
COMBINATION TRAINING:	Practice controlling all Ultrabots

The scenario begins. To exit Training, move the cursor to the upper left corner of the screen. When the EXIT cursor appears, click the LEFT mouse button.

Quit

QUIT takes you back to the DOS prompt. Your game is automatically saved, and you can resume it by typing in your login name at the Login screen.

USING A JOYSTICK

The joystick can be used to control movement of a 'bot and to fire the currently armed weapon at available targets. In order to work, the joystick must be plugged in to the active joystick port before the game is started.

To use your joystick:

1. Plug the joystick into the active joystick port.
2. Load *Ultrabots.*
3. Select a scenario and take control of an Ultrabot unit.

   NOTE: You must be in control of a 'bot to calibrate your joystick!

4. Press and hold joystick button 2, and move the joystick handle through every position (i.e. upper left, upper-middle, upper-right, middle-right, etc.). This motion will calibrate the joystick.

Once you have calibrated your joystick, it can be used to execute the following commands:

Joystick forward ... increase forward speed	Joystick left ..... turn left
Joystick back ..... decrease forward speed / increase reverse speed	Joystick button 1 .. cycle through available targets
Joystick right ..... turn right	Joystick button 2 .. fire current weapon

NOTE: All other commands and functions not listed above must be executed using either the keyboard or the mouse.

Basecamp

The basecamp serves several purposes. It is a fortified base of operations for the soldiers, technicians, and strategists, with facilities for housing troops as well as a Situation Room (SR) for remotely monitoring and directing battle units. The basecamp contains equipment for repairing Ultrabot units, weapons, and building net relays, and houses a large fusion generator which powers the entire base, the net, and all active Ultrabots running off the net.

A ‘bot is repaired and outfitted at Basecamp

SITUATION ROOM

Situation Room Activities

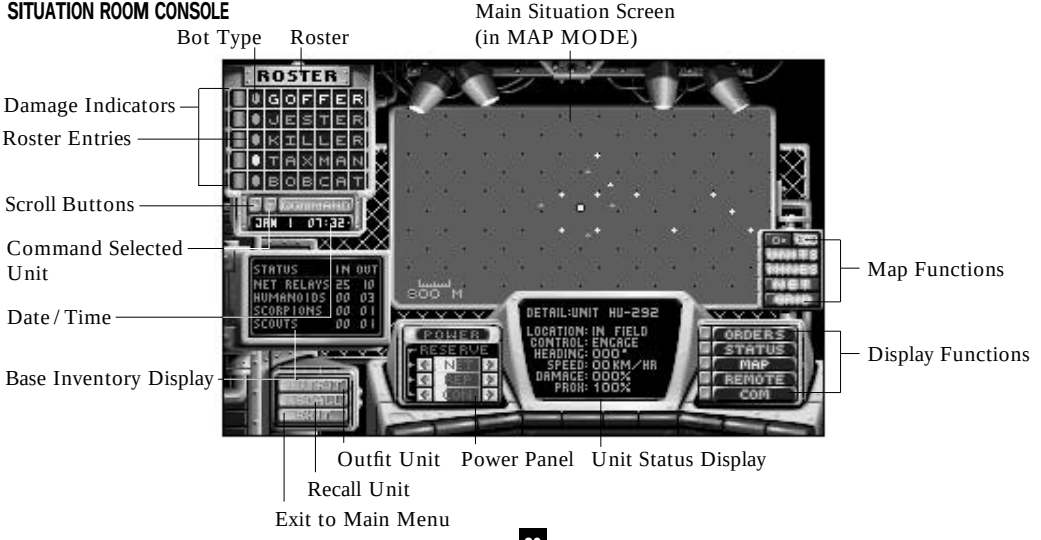
The Situation Room (SR) is the command center for the base. Located in an alcove adjacent to the main Ultrabot hangar, it provides a single commander with access to all available intelligence devices. From the SR, you can perform the following command-level functions:

- Monitor the status of the base, the net, and all units.
- Control the allocation of power at the base between the net, net relay construction, and repair of damaged 'bots.
- Monitor all communications.
- Outfit and deploy newly repaired Ultrabots.
- Monitor the individual status and locations of all Ultrabot units in the field.
- Recall units to base.
- View a large tactical map display to assist in the making of troop movement decisions.
- View the current camera view from any Ultrabot in the field.
- Jump into direct control of any unit.

The SR console is much like the consoles of the three Ultrabots. It features a large display screen and several panels of controls.

SITUATION ROOM CONSOLE

SITUATION ROOM CONSOLE



SITUATION ROOM CONSOLE

Roster

The Roster at the top left of the console lists all available Ultrabot unit identifications. Select any unit by clicking on its name. Click on the Scroll buttons just below the roster to scroll through the currently available units. When a unit is selected, all commands and functions relate to that unit.

To the left of each Roster Entry is a Unit Type indicator which reads blue for Humanoids, yellow for Scouts, and red for Scorpions (Net Builders). When the Unit Type indicator is solid, the unit is in the field. An outlined (not solid) indicator means that the unit is at the base.

To the left of each Unit Type indicator is a Damage Indicator. When a unit is at full health, the indicator is entirely green. As a unit sustains damage, the indicator begins to show red. The more red you see, the more damage the unit has taken. Check the Status screen for a specific damage report.

Using the following buttons you can dispatch direct orders to the currently selected unit, or exit the SR:

COMMAND: Click here to jump to the currently selected Ultrabot unit. You can also take command of any unit by placing the cursor on a Roster Entry and clicking the RIGHT mouse button.

OUTFIT: (In-base units only) When a 'bot is in base click OUTFIT to send the currently selected unit back to the battlefield. This is generally done when the unit is "READY" (following repairs), but in a crisis situation, units "AWAITING REPAIR" and / or "IN REPAIR" can be sent out without repairs. The OUTFIT button has no effect on units already in the field.

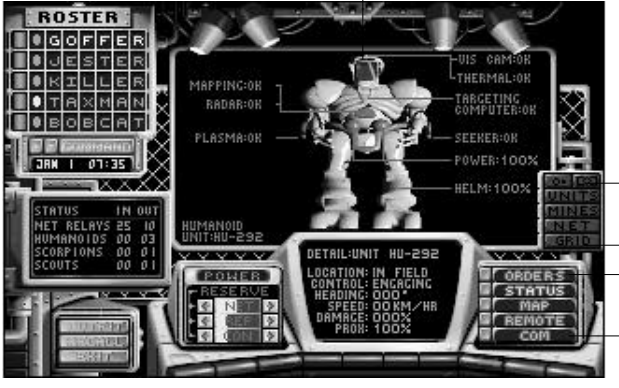
RECALL: Order the currently selected unit to return to base. The RECALL button has no effect on units already at basecamp.

EXIT: Return to the Map Room. The current scenario is paused until you exit the Map Room and return to play.

SITUATION ROOM CONSOLE

MAIN SITUATION SCREEN

Main Situation Screen (in STATUS MODE)



Map Functions

Display Functions

SITUATION ROOM CONSOLE

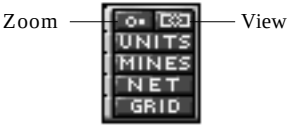
The main situation screen is a large, multi-use display screen. Using the Display Functions panel below and to the right of the screen, you can display the current scenario orders, a selected unit's status summary, a large tactical map with net relay and Ultrabot unit positions marked, a remote camera view from any unit in the field, or monitor all communications channels.

Display Functions

Orders
Displays orders for the current scenario. To review the current mission at any time, click on this button. The information displayed includes all available intelligence on the area and the enemy base, and strategic suggestions.

Status
Monitors the health and strength of the troops. Frequent glances at the status screen can help the commander keep track of each unit's individual damage status.

Map
The map display shows the terrain surrounding the base at a variety of magnifications. To center the display on any point on the map, place the cursor at the desired point and click. To center the display on any unit, click on the unit on the map, or click on the desired Roster entry. Use the Map Functions menu to select the map characteristics you wish to view:



Map Functions

- ZOOM Click here to zoom in and out on the map. To zoom in, click the LEFT mouse button. To zoom out, click the RIGHT mouse button.
- VIEW Toggles between icon and pixel view. Icon view gives the commander the most complete information, including which direction units are facing. Pixel view allows the commander to see individual units who may be too close to distinguish in Icon view.
- UNITS When lighted, all units in the field appear on the map display. Humanoids appear as blue triangles, Scorpions (Net Builders) as red triangles, Scouts as yellow triangles. Enemy units follow the same scheme, but the center of each enemy is marked with a dark red dot.
- MINES Friendly mines appear as green dots on the map display.
- NET When lighted, Net Relays appear on the map display. Friendly relays appear as pulsing white crosses, while enemy relays appear as pulsing red crosses.

■ GRID When lighted, a grid overlay appears on map display. The grid represents net relay points (points at which Net Builders may place net relays in an auto-deploy mode). Diagonally, relays may be on every point (Dense Net) or every second point (Sparse Net). Skipping more than one point on the grid results in loss of power to the relay.

REMOTE: View the battlefield from the selected unit's onboard cam. To see the action from multiple points of view, click on REMOTE, then click on each Roster entry. In this way you can stay in touch with what's happening in the field, and remain aware of any incoming communication from units in the field. NOTE: If the screen displays static, the unit's camera may be damaged, or the unit may be using a sparkle cloak which disrupts all sensors.

COM: View communications from all units and base sensors. The COM button flashes when new messages have been received.

Power Allocation Panel

The power panel controls the allocation of power to the three categories of power consumers at the base. The power supply must be split between the net and Ultrabot repair and net relay construction facilities. Three horizontal light bars indicate the current power allocation settings, and three corresponding sets of left and right arrow buttons allow you to adjust the allocation as needed.

The management of power is simple when the net is small and few Ultrabots are in the field; at those times, there is plenty of power to go around. As the net grows and more units are released, however, the demand for net power will increase greatly.

The NET is the most critical use of power at the base. Without a sufficient power supply, the net can fail, leaving units stranded in the field without net power or communications. The larger the net is, the more power it requires.

Power allocated to REPAIR allows damaged Ultrabot units currently at the base to be reconditioned and refitted. Lowering the power allocation to repair results in few or no repairs completed over time. In the long run, it is important for the base to continue repairing Ultrabots and relays. In the short term, however, power can be withdrawn from repair with few or no negative consequences.

CON refers to the power allocated to the construction of net relays. Lowering the power allocation to CON results in fewer net relays being built.

> NOTE: Each unit's onboard computer can perform minor repairs in the field, provided the unit is within net proximity and sufficient power has been allocated to the net (repairs in the field are not affected by Repair power). These repairs will, however, occur at a much slower pace than repairs performed at base.

RESERVE represents excess power not allocated to a function. When the power allocation is decreased to one resource, it is initially placed in reserve. Likewise, when power is increased to a resource, it is borrowed from the reserve, if possible. Power in reserve does not accumulate.

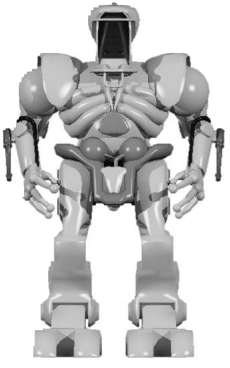
THE ULTRABOTS

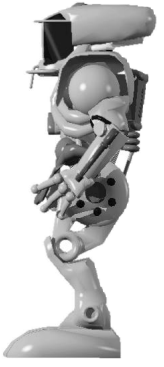
NOTE: The following section describes each Ultrabot in detail. For specific information on controlling Ultrabots, see *Ultrabot Console Subsystems*, page 37, and *Automatic Operation*, page 53.

All three models of Ultrabots have been reverse engineered and retrofitted for use by human operators. Because of limited resources and the urgent nature of the situation, "humanization" of the Ultrabots has been as minimal as possible. As a result, Ultrabots are an unusual blend of human and alien technology.

The three Ultrabot models have been adapted to serve the same purposes as their original designers intended — the tall, well-armed Humanoid Ultrabot for battle, the fast, sensor-intensive Scout for reconnaissance, and the slow Net Builder with its huge cargo bay for net building.

THE HUMANOID





Height:	18 meters
Width (front):	10.5 meters
Length (side):	11.5 meters
Std. cruising speed:	48 km / hr
Max. Emergency speed:	80 km / hr
Max. turning rate:	36˚ / sec
Offensive weapons:	Seeker
	Plasma Cannon
Defensive Weapons:	Sparkle Cloak
	On-board ECM
Crew:	1 pilot

THE HUMANOID

The Humanoid model is the primary fighting machine, with the highest survival rate of all the Ultrabots. Its medium speed and agility, heavy armor, and combat skill make it the best equipped to engage in battle, and the Humanoid sensor array contains a full range of sensing devices to aid in navigation and attack.

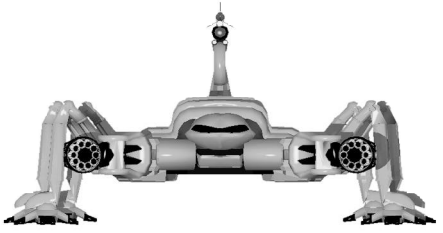
The Humanoid's heavy armor provides a high degree of protection but also serves to inhibit both its speed and agility. At top speed the Humanoid can outpace a Net Builder, but it can not keep up with the Scout at top speed. The emergency speed of 80 km per hour can be used to get the Humanoid out of a dire jam if battery power is available.

> NOTE: For specific information on controlling *Ultrabots*, see *Ultrabot Console Subsystems*, page 37, and *Automatic Operation*, page 53.

What the Humanoid lacks in speed it makes up for in firepower. The Humanoid has two energy-weapon mounts: a medium power seeker and a high power plasma cannon. The seeker can reach targets as far away as 1 kilometer and recharges quickly after firing. The plasma cannon has about double that range and inflicts significantly more damage, but takes longer to recharge and draws more energy. The weapons subsystem receives a lion's share of the Humanoid's overall power allocation, giving it greater range and faster firing rates than the other Ultrabots.


CRT
PDS
Power Panel
Sensor Readings
(click to scroll through sensors)
Current Auto Program
(click to scroll through
programs)
Automatic Operation
Manual Operation
Radar
Navigation Panel
Helm
Weapons Panel
Weapons status
Unit Codename
(click for next 'bot)
Camera Controls
Magnification
Map Functions
Defensive Weapons
CANNOT ENGAGE ENEMY
UNABLE TO ACQUIRE TARGET
CANNOT ENGAGE ENEMY
UNABLE TO ACQUIRE TARGET
CANNOT ENGAGE ENEMY
NET
BAT
WEAPONS
SEEKER:OK
PLASMA:OK
CLOAK:10
ECM:55
ENGAGE
ETL
FIRE
SEEKER
PLASMA
TARGET: MANUAL
RANGE:
BEARING:
SEEKER: READY
PLASMA: READY
888 KPH
VIS
THRM
MAP
CLOAK
ECM
GOFFER

THE NET BUILDER (SCORPION)



Height (to tail):	22 meters
Height of main hull:	14.5 meters
Width (front):	30 meters
Length (side):	36 meters
Cruising speed empty:	48 km / hr
Cruising speed fully loaded:	19 km / hr
Max. emergency speed:	20% faster
Max. turning rate:	6˚ / sec
Offensive weapons:	Dual rapid-fire Cannons
	Homing Missile
Defensive weapons:	Proximity Mines
	Sparkle cloak
	Alarm buoys
	ECM buoys
	EMI decoys
Cargo bay capacity:	12 net relays
Crew:	1 pilot, 1 technician

THE NET BUILDER (SCORPION)

The large, slow Net Builder (also known as the Scorpion) is primarily used for building and maintaining the net. Although capable of carrying a crew of 8, the Net Builder is manned by only one operator and one technician.

Because it is the only Ultrabots designed to deploy net relays, the Net Builder is critically important to the growth and survival of the base. A Net Builder is loaded with net relays at the base and is sent out with deployment orders. Several auto programs are dedicated to this task, with variables such as relay density and deployment pattern providing a fair degree of control over unsupervised net-building.

The main body houses a large cargo bay primarily used for the storage of net relays, which it deploys to extend the sphere of influence of the net. Within the bay, robotic cargo movers can sort, analyze, and perform rudimentary repairs upon various items. The technician can also perform some on-the-spot repairs.

Compared to the other Ultrabots models, the Net Builder is weak on sensors, with only the visual and thermal cameras plus radar. Although these sensors are sufficient for relay deployment and scavenging, they leave the Net Builder vulnerable to enemy attack. As a result, Net Builders should either be used in safe areas or escorted by Scouts or Humanoids.

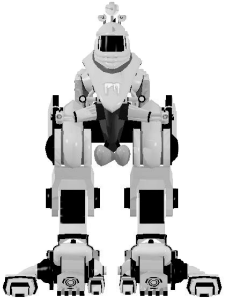
The Net Builder's armament, featuring two front-mounted rapid-fire cannons and a tail-mounted homing missile, is formidable but limited. The tail missile is an effective weapon to use during a retreat from enemy attack due to its large blast radius. The forward cannons fire small shells in rapid succession. Despite this firepower, the Net Builder's slothful speed leaves it unmatched against three or more enemy units.

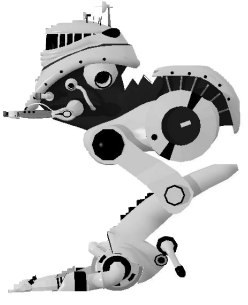
> NOTE: For more information on deploying net relays, see *Net Strategies*, page 78. For more information on the Net Builder's Cargo subsystem, see *Cargo Subsystem*, page 70. For specific information on controlling Ultrabots, see *Ultrabot Console Subsystems*, page 37, and *Automatic Operation*, page 53.

THE NET BUILDER (SCORPION)

PDS
Power Panel
CRT
Radar
Sensor Readings (click on body part for individual sensor readings)
Helm
Current Auto Program (click to scroll through programs)
Defensive Weapons
Weapons Panel
Manual Operation
Weapons status
Automatic Operation
Unit Codename (click for next 'bot)
Magnification
Map Functions
Weight / Volume Gauges
Navigation Panel
Camera Controls
Cargo Panel

THE SCOUT





Walking height:	15 meters
Minimum standing height:	12 meters
Maximum standing height:	18.5 meters
Width (front):	11.5 meters
Length (side):	13 meters
Std. Cruising Speed:	72 km / hr
Max. Emergency Speed:	95 km / hr
Max. Turning Rate:	72˚ / sec
Offensive weapons:	Small Cannon Seeker
Defensive weapons:	On-board ECM Sparkle cloak Proximity Mines ECM buoys Alarm buoys EMI decoys
Crew :	1 pilot

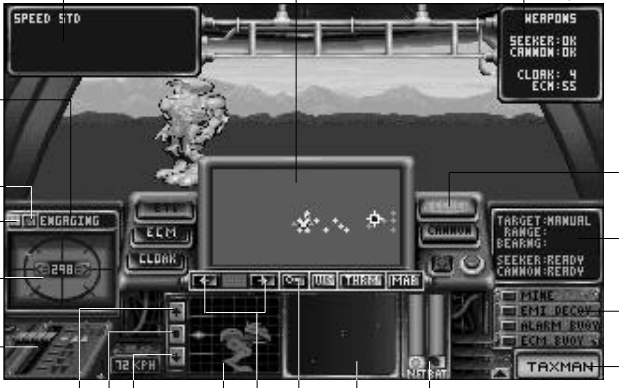
THE SCOUT

The Scout is designed for reconnaissance. Its excellent speed and agility allow it to move quickly and covertly in or near enemy territory. With its relatively compact size, longer battery power, and powerful array of sensors, the Scout is ideally suited for advance investigation of unknown regions, intelligence collection, and contingent escorting.

While able to engage in battle, the Scout's weaponry and armor are primarily intended for defensive use. Its weaponry is inferior to that of the Humanoid, but it's rapid firing ability gives it a bit of an advantage in a short fire fight. A short fight is generally all the Scout can handle; its inferior armor can sustain only a small amount of damage, making the Scout the most physically vulnerable of all the Ultrabots. Luckily, its speed and agility afford it a good chance of escape.

The unique design of the Scout's legs give it several advantages. The long, multi-segmented legs give it a long step and a wide range of speed latitude while the broad foot pads help the unit to maintain a high degree of stability at any speed. At top speed, the Scout can move far more quickly than either Humanoids or Net Builders. For this reason, the Scout can frequently escape an enemy even after being detected.

THE SCOUT



CRT

PDS

Sensor Readings
(click to scroll through sensors)

Current Auto Program
(click to scroll through
programs)

Automatic Operation

Manual Operation

Navigation Panel

Helm

Weapons Panel

Weapons status

Defensive Weapons

Unit Codename
(click for next 'bot)

High Profile

Standard Profile

Low Profile

Height
Control

Camera Controls

Magnification

Radar

Power Panel

NOTE: For specific information on controlling *Ultrabots*, see *Ultrabot Console Subsystems*, page 37, and *Automatic Operation*, page 53.

At all cruising speeds, the Scout is three meters shorter than a Humanoid Ultrabot. While motionless, however, it has additional height control, or profiles, which facilitate covert operations. The Scout can be made to rise to a high profile of 18.5 meters. The Scout's visual and sensor views are, in general, not improved at high profile, but low profile can be used to crouch behind obstacles for a better defensive position. The Scout can crouch to a low profile of 12 meters, giving it limited ability to hide and to present the smallest possible target. These maneuvers help the Scout to offset its relatively light armor and firepower. The Scout can only walk at standard profile and will go to that mode automatically if the operator attempts to move it while at any other profile.

The Scout's battery can sustain it away from the net for about twice as long as the other Ultrabots. This enhances its ability to foray deeper and longer into unfriendly territory.

ULTRABOT CONSOLE SUBSYSTEMS

An Ultrabot is a complex system of individual components or subsystems. Each subsystem is responsible for a particular aspect of the Ultrabot's operation such as movement, communications, or attack. Although computer control and automation relieves an operator of much of the work of controlling an Ultrabot, each subsystem requires some operator input or feedback.

ULTRABOT CONSOLE SUBSYSTEMS

Humanoid Console

CRT

PDS

Power Panel

Sensor Readings
(click to scroll through sensors)

Current Auto Program
(click to scroll through
programs)

Automatic Operation

Manual Operation

Radar

Navigation Panel

Helm

Weapons Panel

Weapons status

Unit Codename
(click for next 'bot)

Camera Controls

Magnification

Map Functions

Defensive Weapons

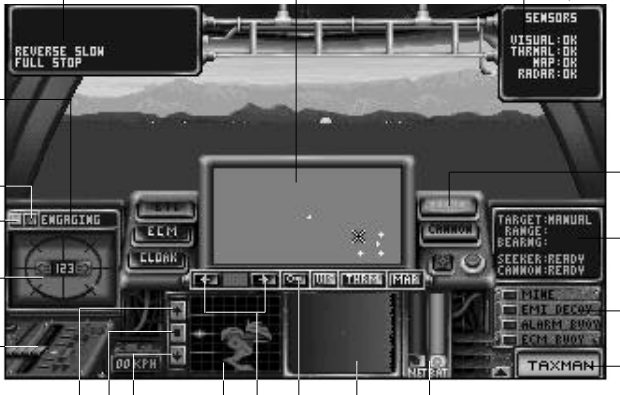
ULTRABOT CONSOLE SUBSYSTEMS

Net Builder (Scorpion) Console

PDS
Power Panel
CRT
Radar
Sensor Readings (click on body part for individual sensor readings)
Helm
Current Auto Program (click to scroll through programs)
Defensive Weapons
Weapons Panel
Manual Operation
Weapons status
Automatic Operation
Unit Codename (click for next 'bot)
Magnification
Map Functions
Weight / Volume Gauges
Navigation Panel
Camera Controls
Cargo Panel

ULTRABOT CONSOLE SUBSYSTEMS

Scout Console



CRT

PDS

Sensor Readings
(click to scroll through sensors)

Current Auto Program
(click to scroll through programs)

Automatic Operation

Manual Operation

Navigation Panel

Helm

Weapons Panel

Weapons status

Defensive Weapons

Unit Codename
(click for next 'bot)

High Profile

Standard Profile

Low Profile

Height Control

Camera Controls

Radar Magnification

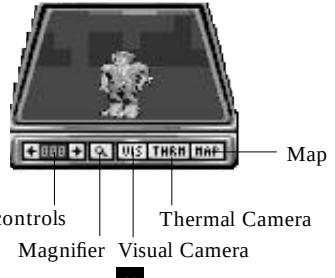
Power Panel

CRT Subsystem

CRT

The CRT is a text display screen used by the on-board computer for displaying some sensor readings and all incoming communications. Messages routed to the CRT are printed sequentially, and the display scrolls up as necessary to allow room for new messages.

Primary Display Subsystem



ULTRABOT CONSOLE SUBSYSTEMS

The primary display subsystem (PDS) is the heart of every Ultrabot operator's console. Located in the center and always the largest display in the console, it is capable of displaying a variety of important data.

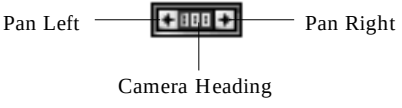
By pressing one of several mode-select buttons, the operator can use the PDS as one of the following types of displays:

Visual
The visual camera can be pointed in any direction with a variety of magnification levels and can be particularly useful for watching rearview action without physically turning the Ultrabot.

Thermal
The thermal camera offers all of the same features of the visual camera, except that it is sensitive to thermal images. Due to high ambient heat levels, the thermal camera is almost useless during the day; however, it is very effective for night imaging. Ultrabot units (particularly damaged units), net relays, and some airborne weapons become visible using the thermal camera. Mines, however, are intentionally cold and do not image well.

Terrain Map
The PDS generates maps of local terrain at a variety of scales. The location of the current Ultrabot, its base, and friendly units and net relays are always electronically marked on the map. The positions of enemy units and friendly mines may be displayed if the base is aware of them. The map is also used for setting destination points when initializing auto-programs (see *Initiating Auto-Programs*, page 55).

Panning the camera:



Both the Visual and the Thermal cameras can be panned 360° for a view of any direction from the unit. The Camera Heading display shows the current position of the camera relative to the unit's heading (i.e. when the camera heading displays 000°, the camera is facing the same direction as the unit).

- To position the camera view directly in front of the unit, click on the Camera Heading. The display shows zero, indicating straight ahead.
- To pan LEFT, click on the left pan arrow.
- To pan RIGHT, click on the right pan arrow.

To ZOOM in and out (all modes):

Magnifier

- Place the cursor on the Magnifier button. Click the LEFT mouse button to zoom in. Click the RIGHT mouse button to zoom out.

  NOTE: In visual or thermal modes, the camera automatically tracks a locked target, and the TRACKING indicator flashes on the PDS. Manual adjustments to the camera position disable tracking until a new target is locked.

Helm/Navigation Subsystem

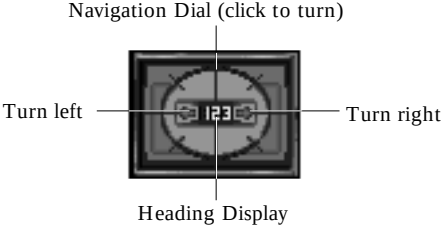
The Helm / Navigation subsystem controls all movement of the Ultrabot unit. As the name implies, its functionality is divided between navigation controls for setting course and helm controls for adjusting speed. Both sets of controls are governed by the manual / automatic operation switch, which determines whether the unit is under direct operator control or is following a pre-programmed set of instructions.

Manual Operation:

NOTE: For keyboard instructions, see *Keyboard Commands*, centerfold.

In manual mode, an Ultrabot's movement is determined solely by the current course and speed. This degree of direct control requires almost constant attention from the operator in order to negotiate rough terrain and avoid collisions with obstacles and other Ultrabots.

Navigation



When a new heading is desired, it is entered directionally in the navigation panel. The heading control in each console allows the desired course to be set with a marker in a circular gauge. The gauge represents 360° of direction, with due north always at the top.

To turn your Ultrabot unit:

- Click on the LEFT or RIGHT directional arrows on the navigation panel
  or
- Click on a specific position on the Navigation Dial. 'Bot turns to new heading.

Helm

MAP ROOM

Quit / Exit to DOS	ALT-Q
Cycle through selectable scenarios on Map	TAB
Reverse-cycle through selectable scenarios on Map	ALT-TAB
New player / game	N
Unit review	R
Play currently selected scenario	P or SPACE

TRANING

Humanoid Training	H
Scorpion (Net Builder) Training	N
Scout Training	S
Combined Training	C
Exit to Map Room	ALT-Q

UNIT REVIEW

Exit to Map Room	ALT-Q
Cycle through units	TAB

KEYBOARD COMMANDS

SITUATION ROOM

Exit to Map Room ..... ALT-Q
Pause / resume game F1

Select next unit on Roster ..... TAB
Select previous unit on Roster ..... ALT-TAB
Outfit currently selected unit F2
Recall currently selected unit F3
Jump to (command) currently selected unit ..... J or SPACE

Decrease Net power 1
Increase Net power 2
Decrease Repair power 3
Increase Repair power 4
Decrease Construction power 5
Increase Construction power 6

Display Communications C
Display Tactical map ..... M
Display mission Orders ..... O

Display Remote camera view from currently selected unit ..... R
Display Status screen for currently selected unit ..... S

Show / hide buoys, mines, etc. (map mode only) ..... B
Show / hide Net relays (map mode only) ..... N
Toggle icon mode on / off (map mode only) I
Show / hide grid (map mode only) ..... G
Show / hide Units (map mode only) ..... U
Zoom in (map mode only) ..... +
Zoom out (map mode only) ..... -

COCKPIT

Exit to Situation Room ..... ESC or ALT-Q
Pause / resume game F1

Jump to (command) next unit ..... TAB
Jump to (command) previous unit ..... ALT-TAB

PDS mode: Visual V
PDS mode: Map ..... M

PDS mode: Thermal	T
PDS pan left	Z
PDS pan right	X
PDS look forward	Y
PDS Zoom IN	+
PDS Zoom OUT	-
Accelerate	UP ARROW
Decelerate	DOWN ARROW
Turn LEFT	LEFT ARROW
Turn RIGHT	RIGHT ARROW
STOP	. (period)
Set Helm to Manual	F2
Set Helm to AUTO	F3
Cycle through Auto-Programs	F4
Arm weapon #1	F5
Arm weapon #2	F6
Fire currently armed weapon	SPACE
Use ECM	F7

Use Sparkle Cloak	F8
Deploy mine (Scout & Net Builder only)	1
Deploy ECM buoy (Scout & Net Builder only)	2
Deploy Alarm buoy (Scout & Net Builder only)	3
Deploy EMI decoy (Scout & Net Builder only)	4
Auto Target (smart target w/cycling between targets)	A
Release Target lock	R
Load Relay (Net Builder only)	L
Unload Relay (Net Builder only)	U
Dump cargo (Net Builder only)	D (Repeat to abort Dump)
Cargo repair (Net Builder only)	C
High Profile (Scout only)	E
Low Profile (Scout only)	Q
Standard Profile (Scout only)	W
Cycle through status screens (Scout/Humanoid only)	S

Unit speed is determined differently in each of the three consoles; however, all three can move at a variety of forward and reverse speeds. All units have a standard cruising speed which is the ideal maximum forward speed. Speed can be maintained indefinitely when running off net power and with only moderate consumption of battery power.

NOTE: The Scout, because it is designed for advance reconnaissance, can move at all speeds with significantly less energy draw than the other two Ultrabot types. This enables the Scout to explore areas away from the net.

To adjust speed:

- Humanoids and Scouts: Place the cursor on the Helm Control and drag it to the desired speed position.

- Scorpion: Place the cursor on the up or down arrow of the Helm control and click until the unit reaches the desired speed.
  or
- All units: Press the up or down arrows on the keyboard.

NOTE: The helm can be controlled with a joystick: Push forward to accelerate, back to decelerate, and left or right to turn. For keyboard instructions, see *Keyboard Commands*, centerfold.

Automatic Operation:

In automatic mode, an Ultrabot can be programmed to carry out certain maneuvers without operator intervention. However, Auto Programs are relatively simple, and are not designed to be left running indefinitely. While maneuvering under the control of an auto program, the on-board computer will attempt to avoid collisions with obstacles, such as other units, but it is always a good idea to keep an eye on 'bots in auto-mode to ensure their safe passage during combat. In the event that the on-board computer is not able to complete its program, it alerts other units and waits for further orders. The following auto programs are available to all Ultrabot models. For instructions on utilizing auto-programs, see *Initiating Auto-Programs,* page 55.

- Hold position: Proceed to destination point and wait for further orders. Observe communications and active-sensor silence. If threatened by enemy units, notify and retreat toward base.
- Sentry: Proceed to destination point and patrol the area, restricting movement to a perimeter around the destination point. Alert base in the event of battle. During battle, restrict movement to perimeter around the defense position, and do not pursue enemies outside the perimeter.
- Sentry / pursue: Proceed to destination point and patrol the area, restricting movement to a perimeter around the destination point. Alert base in the event of battle. During battle, enemies may be pursued. After pursuit, return to original defense position.
- Return to base: Proceed directly to base at maximum speed. Alert base upon arrival.
- Go to position: Proceed directly to specified destination at standard speed. Alert base upon arrival at destination.

- Shadow: Follow another specified friendly Ultrabot unit (destination unit). Defend against approaching enemies; however, do not pursue.
- Shadow / pursue: Follow another specified friendly Ultrabot unit. Defend against approaching enemies. During battle, enemies may be pursued. After pursuit, attempt to resume shadow.
- Patrol: Proceed to destination point and search forward for enemy units. Engage enemy units that come into targeting range.
- Go to unit: Proceed to selected destination unit.
- Engage: Engage in battle with the current target or nearest enemy unit. Pursue the unit if necessary. Upon defeating the enemy, alert base. If another enemy unit is nearby, proceed to engage that unit. Otherwise, execute the previous auto program.

In addition, the following net deployment auto programs are available to Net Builder Ultrabots only.

- Dense Net: Deploy relays in a specified direction from base using the standard, high deployment pattern.
- Sparse Net: Deploy relays in a specified direction from base in a low density pattern.
- Probe Net: Deploy relays in a specified direction from base using an aggressive, penetration pattern.

Net Builders deploy net relays according to the network grid (as seen on the Situation Room's map display). When the operator specifies a *destination point* and initiates an auto-program, the NB begins deploying relays relative to the destination point. It is important to note, however, that the NB will always begin at the network grid point nearest his location. This may require it to double back, or seem to head *away* from the destination point temporarily. When the NB reaches its destination point, it alerts the base and awaits further orders. If its supply of relays is exhausted, the NB alerts the base and returns for reloading.

> NOTE: For more information on Net Builder programs and procedures, see *Initiating Auto-Programs,* below, and *Net Strategies,* page 78.

Initiating Auto-Programs

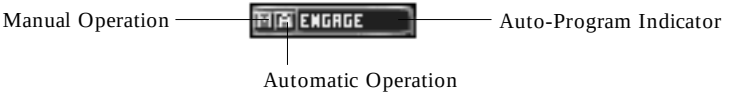
First, set a *destination point* or *unit:*

The *destination point* is the point at which you wish a unit to execute its program, or end its program and await further orders. The *destination unit* is the unit you wish the unit to execute its program on or in relation to. For example: If you wish a unit to go to a specific position and await further orders, place the *destination point* at that position. If you want a Humanoid to accompany a Net Builder to unprotected territory, go to the Humanoid's terrain map and place the *destination unit* marker on the Net Builder.

To set a destination point:

1. Click on the MAP button on the PDS to switch to the Terrain Map.
2. Press and hold the ALT key, then move the cursor onto the map. The cursor becomes an X.
3. Place the cursor at the desired point or unit on the map, then click the LEFT mouse button to place the X. This is now your unit's *destination point*, or *destination unit*.

Next, specify an Auto-Program:



The Auto-Program indicator displays the current program. To scroll through the available programs, click directly on the indicator. Once you have set a *destination point* or *unit*, scroll through the programs until the desired program appears on the indicator.

- Click the LEFT mouse button to go forward through the list. Click the RIGHT mouse button to go backward.

Now, initiate the Auto-Program:

When you have set a *destination point* or *unit*, and chosen the desired Auto-Program, it's time to initiate the program and let the Ultrabot unit do its job.

- Click on A (Automatic Operation). The program commences.

When the unit has completed the program, a message appears at the Com center in the Situation Room. The unit waits at the specified location until further orders are dispatched.

Weapons Subsystem

NOTE: The following section describes in detail the weapons available to *Ultrabot* units. For information on targeting, arming, and firing weapons, see *Weapons Panel*, page 62.

The weapons subsystem controls the function of all on-board weapons as well as the target acquisition and tracking mechanism. There are currently five types of offensive weapons and five types of defensive weapons available, although not all weapons are available to all Ultrabot models (see availability chart below).

OFFENSIVE WEAPONS:

Plasma Cannon (Humanoid Only)
A powerful energy weapon , the plasma cannon is a power-based device and is limited by available power levels. It features greater range than the seeker as well as significantly greater destructive power at all ranges. The plasma cannon can be used under battery power, but the draw-down on the battery is severe. Unlike the seeker, it requires a 30 second reload period, and its accuracy and power diminish with distance.

Seeker (Humanoid / Scout)
The seeker fires short illuminated shots which turn in flight to seek the target. Under some circumstances the seeker is able to fire around corners at approaching enemies, but due to its limited turning radius, closer moving targets may occasionally escape damage. The damaging effect of the seeker is moderate, but it can be fired in rapid succession and with great accuracy. The seeker has unlimited power within the net, but depletes the battery quickly outside net power. Its accuracy and power diminish with distance.

Small Cannon (Scout Only)
The small cannon is an effective short-range projectile weapon. Its shells explode on impact, resulting in moderate damage localized around the point of impact. Reload time for the cannon is about four seconds, and it can be fired effectively under both net and battery power.

Dual Rapid-fire Cannon (Net Builder only)
The dual rapid-fire cannon is a “gatling gun” style version of the small cannon, and is tailored for use on the NB’s two forward weapon arms. Although it inflicts only medium damage, its effectiveness is enhanced by its rapid firing capacity . The dual guns fire shells alternately, resulting in a firing rate of up to 8 shells per second (about 30 times faster than the

Scout's small cannon). If one of the guns is damaged, the other continues to fire at an effective rate of 4 shells per second. When the weapon is used without a target lock, it fires forward with a wide dispersion area. This feature can be used for a "machine gun" effect, to spray an area with shells.

Tail Missile (Net Builder Only)
The tail missile is a special weapon fitted to the Net Builder's tail-mount. It houses a powerful warhead which inflicts massive damage within a half-kilometer radius of the detonation point. The tail missile can only be fired if a target has been acquired; it automatically homes in on the target, and its onboard camera provides a view of its journey and the destruction of the target via the PDS. The tail missile has a reload time of approximately two minutes, making it of limited usefulness in a multiple-unit battle. Each Net Builder has an initial supply of 6 missiles, which are not reloaded when the unit returns to base for repair.

DEFENSIVE WEAPONS:

All defensive weapons are of limited supply. Unlike offensive weapons, they can be used at will, without being armed individually. Defensive weapons are not replenished when units return to base for repair.

On-board ECM
Electronic counter-measures (ECMs) are small devices within the unit which emit electromagnetic radiation. ECMs disrupt radar imaging, in addition to the automatic targeting systems of enemy units.

Sparkle Cloak
Sparkle cloak forms a thick cloud within a 25 meter radius around the unit. Like a smoke-screen, it obscures the Ultrabot from view both visually and thermally, as well as preventing accurate RADAR readings. After releasing a burst of sparkle

cloak, the operator is best advised to move quickly in a pre-determined escape direction; while immersed in the cloak, the unit is totally sensor-blind.

ECM Buoy

An ECM buoy is a small time-delayed device which releases ECM ninety seconds after being dropped. The ECM is frequency tuned to affect only enemy units. When released, the ECM disrupts radar imaging and automatic targeting systems.

EMI Decoys

An EMI decoy emulates the electromagnetic and thermal signature of an Ultrabot unit. EMI decoys can be used to dilute enemy fire across false targets. From a nearby vantage point, an EMI image would indicate that a target has split in two — one moving and one stationary. EMIs are most effective when dropped out of sensor range or in the heat of a multi-unit battle.

Mines

Mines are explosive charges triggered by contact or motion. When detonated directly under an enemy unit, a mine can cause significant damage or even total destruction. Mines are sensor-cold objects and are nearly undetectable by both enemy and friendly units. The base computer keeps track of the locations of all friendly mines laid in net proximity — as a result, these mines are automatically avoided by units in net proximity. Mines laid by enemies are unknown to the base and are dangerous to all units. Automatic mine avoidance is not available to units outside net proximity.

Alarm Buoy

Alarm buoys are very similar to mines except that instead of detonating an explosive when triggered, the alarm buoy sends a high priority message over the net. Alarm buoys are useful for notifying the base that a perimeter has been

crossed, without having to expend Ultrabot units for patrols. In situations where there may be multiple fronts of attack, a few alarm buoys can be dropped in various areas, and the units brought back to a defensive position. When an enemy comes near an alarm buoy, it sends a message to the base and all units. In the Situation Room, the map display indicates a crossed perimeter with a blinking Alarm Buoy icon.

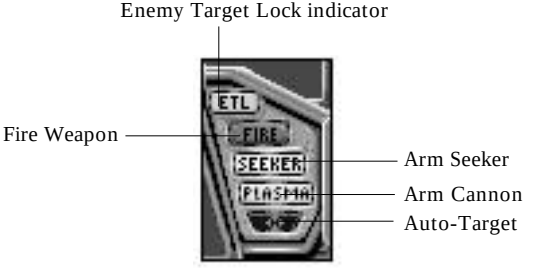
WEAPON AVAILABILITY

The following table summarizes the availability of each type of weapon to each Ultrabot model:

	Humanoid	*Net Builder*	*Scout*
OFFENSIVE WEAPONS			
Seeker:	■		■
Plasma cannon:	■		
Small cannon:			■
Rapid-fire cannon:		■	
Missile:		■	
DEFENSIVE WEAPONS			
On-board ECM:	55 bursts		55 bursts
Sparkle Cloak:	10 bursts	None	4 bursts
ECM Buoy:	None	8	2
Alarm Buoy:	None	8	2
Mines:	None	20	6
EMI / Thermal Decoys:	None	4	6

Weapons Panel

Although there is some variation between the weapons panels of the three Ultrabot consoles, all operate in essentially the same way. Each weapons panel contains buttons for weapon selection, target acquisition, and fire.



Humanoid Weapons Panel

Scout Defensive Weapons Panel

USING YOUR WEAPONS:

In order to use an offensive weapon, you must arm the weapon, target an enemy, and fire the weapon. The following section describes each step of the process.

To arm an offensive weapon:

- Press the desired weapon select button. The button is lighted, and a message appears on the CRT indicating that the weapon is armed.

  NOTE: One offensive weapon may be armed at a time, and arming one weapon always disarms the other.

Target Acquisition:

NOTE: The following describes the procedure for targeting an enemy. For more information on the Targeting Computer, see *Targeting Computer Subsystem*, page 66.

Unless a target has been acquired by the on-board computer, weapons are fired straight ahead (in the unit's heading direction, level to the weapon). With a target lock, however, the armed weapon is automatically aimed. Target acquisition can be performed directly by the operator or automatically through proximity.

NOTE: Seeker missiles cannot be fired until a target lock has been acquired.

To acquire a target manually:

1. Locate the object you wish to target through either the console window or the PDS (all modes).
2. Place the target cursor (cross-hairs) on the object and click the left mouse button. The target icon appears over the target (GREEN SQUARE if enemy, RED X if friendly target), and the PDS tracks the target.

To acquire a target automatically:

- Move the cursor over the green AUTO-TARGET button on the Weapons panel and click the LEFT mouse button. This initiates the Smart Target system, and the computer attempts to lock onto the nearest enemy unit.

  NOTE: To cycle through available targets, click on the AUTO-TARGET button repeatedly. To release the current target, click the RIGHT mouse button on the AUTO-TARGET button.

If a target is successfully acquired, an appropriate message is displayed in the CRT. Thereafter, the on-board computer attempts to maintain a lock on the target until either it is unable to do so or another target is requested by the operator.

Target locks may be lost for the following reasons:

- The target moves out of range. Maximum range depends on the Ultrabot type and the condition of the targeting computer. Note that an enemy may be within range of the targeting computer but out of range of one or all weapons.

- Sensor contact with the target is lost. Under some conditions, sensor contact may be limited to line-of-sight. Defensive weapons such as ECM buoys can temporarily inhibit sensor contacts. Damage to sensors or low-power conditions may also reduce or eliminate sensor contact.
- The targeting computer is damaged. If the targeting computer is damaged, a message will appear on the CRT alerting the operator of the problem.
- Another target is acquired. If the operator requests a new target lock, the current lock is lost.
- The target is manually released. The operator can release the current target by clicking the RIGHT mouse button on the AUTO-TARGET button.

Firing:
In order to fire a weapon, the armed weapon must be loaded (ready), undamaged and have sufficient power or ammunition. For best precision, a target-lock should also be acquired. Some weapons, such as the seeker, require a target lock in order to fire.

To fire an armed weapon:
- Click on the FIRE button.

To fire a weapon repeatedly:
- Click and hold the FIRE button, or click on the FIRE button repeatedly.

Repeat fire is limited by the amount of ammunition or power available and by the reload speed of the current weapon. If the armed weapon is unavailable (damaged or exhausted), an alert message appears on the CRT.

Targeting Computer Subsystem

When a target is acquired by the weapons subsystem, it is the targeting computer which attempts to track the target. If the computer becomes damaged, all weapon aiming must be done manually. Of all Ultrabot weapons, only the seeker and the Scorpion's tail missile cannot be fired without a target lock. For instructions on targeting your weapons, see *Using Your Weapons,* page 63.

Communications Subsystem

Messages are generated by a variety of automated Ultrabot systems. Many messages, such as the notification of damage to a subsystem, are routed only to the unit's CRT to be viewed by that unit's operator. Other messages may be sent to all units or to the base. Auto programs, for example, may inform the base when a unit's destination has been reached, letting the commander at base know that further instructions are needed by the unit. Under some circumstances, auto programs may notify all units of an important piece of information, such as when an enemy is first encountered.

Messages sent to the base can be viewed on the large screen in COM mode. Such messages are stamped with the unit ID and time. Unread messages cause the COM button to flash. Messages straight to the unit's CRT will function at all times regardless of power level.

Sensors Subsystem

The sensors subsystem incorporates the following electronic detection devices:

Visual / Thermal Cameras

All three Ultrabots are equipped with an external camera module containing both a visual and a thermal camera. Both cameras generate images on the Primary Display Screen (PDS). The camera module can be pointed in any direction and can image using a variety of magnification factors. The cameras are useful for examining distant locations or monitoring rear or side views.

RADAR

The active RADAR sensor will detect objects the size of Ultrabots up to a distance of 5 kilometers. Large obstacles may prevent the detection of other objects farther away along the same line of sight.

Power Subsystem

The power control subsystem on the Ultrabots is completely controlled by the on-board computer. Power is automatically allocated to the various subsystems based on the priorities for a given model. When the net power level drops below a critical functional level, the power subsystem automatically switches to battery power. When the unit returns to net proximity, the unit resumes running on net power.

Scout Power Panel

When an Ultrabot unit is outside net proximity, a *trickle charge* feature allows the battery to recharge at a very gradual rate. The trickle charge may eventually give a stranded unit enough power to get back to the net. It is not sufficient to allow multiple weapon firing or other power intensive activities.

Net power

An Ultrabot normally operates using power received from the net. When a unit is in proximity to an active net relay, it receives a steady supply of power which drives all unit subsystems. As long as it remains in proximity to an active net relay, the unit will not run out of power.

Battery Power

Rechargeable battery power is also available as an alternative. Battery power is needed when a unit is away from the net, but should be used sparingly since it is quickly depleted and is slow to recharge. The battery lifetime is about one hour under normal activity and slightly less when using weapons or emergency speed.

Status/Diagnostic Subsystem

The status and diagnostic subsystem constantly monitors all other Ultrabot subsystems. Its diagnostics function in the background, running tests on the various equipment, looking for malfunctions. The status / diagnostic summary can be displayed on the console's status display screen and shows either a text readout (Humanoid and Scout) or a graphical representation (Net Builder) of unit status including an itemized list of current operational levels for the following subsystems:

Subsystem	*Status*
Helm	% damage
Sensors	% damage
Weapons	OK or damaged for each
Communications	OK or damaged
Targeting Computer	OK or damaged
Cargo Bay	OK or damaged (Net Builder only)
Life Support	% damage
Defensive Weapons	OK or Out for each

To scroll through status display screens (Humanoid and Scout):

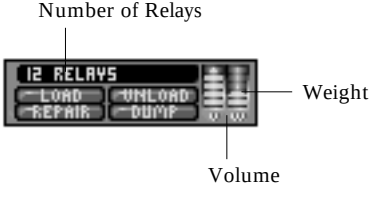
- Click on the status display screen. Continue clicking to display all status screens.

For status information on Net Builders:

- Click on the various areas of the graphical display representing the areas of the Net Builder's anatomy. Status readings appear on the CRT.

Cargo Subsystem (Net Builder)

Because of the special activities it is designed to perform, the Net Builder Ultrabot has a special cargo management subsystem not available to either the Humanoid or the Scout. The cargo subsystem gives the Net Builder operator control over the loading and unloading of items in the cargo bay as well as limited ability to examine items and perform some on-the-spot repairs.



The cargo subsystem is primarily used to deploy and maintain net relays. The cargo subsystem panel, however, has controls for a variety of generic cargo functions. The components of the panel are described in detail below:

Volume

The Volume bar indicates the percentage of the cargo bay that is filled. When the bar is fully lighted, the bay is filled to capacity. When the bar is dark, the bay is completely empty.

Weight
Like the Volume bar, the Weight bar indicates the combined weight of all items carried in the bay as a percentage of the maximum weight.

Load
If the Net Builder is positioned over an item, such as a net relay, the item can be loaded into the cargo bay using the LOAD button.

To load cargo:

- Position the Net Builder directly over the item you wish to load and click on the LOAD button.

  NOTE: For best results, the Net Builder should be traveling at less than 5 kph in order to load an item. If the message RELAY NOT CLOSE ENOUGH appears, move the Net Builder forward or backward slightly and continue attempting to load.

Unload
The UNLOAD option drops a single net relay. The operator uses this option for placing net relays manually. It is not necessary for the Net Builder to be stationary in order to unload an relay; however, unloading net relays from a moving unit may damage them. Remember: dropped relays MUST be in proximity to an active net relay in order to become active.

To unload cargo:

- Click on the UNLOAD button. The current cargo item is dropped.

NOTE: Placing a net relay in proximity of BOTH an active friendly relay AND an active enemy relay can result in the new relay becoming a part of the enemy network, and may cause other nearby relays to be claimed by the enemy net as well.

Dump

The DUMP option is an emergency procedure which unloads the entire contents of the cargo bay. If the bay is more than 20% full in terms of volume, the Net Builder should be moving during a dump. Dumping the cargo may cause damage to items unloaded, but the sacrifice may be necessary in order to increase a unit's speed in an escape situation.

To dump cargo:

- Click on the DUMP button on the Cargo Panel. To stop dumping, click on DUMP again.

Repair button

The repair button causes diagnostic and field repair functions to be run on any cargo which need it. This happens automatically, but only periodically. To initiate repairs immediately, use the REPAIR function.

To repair a cargo item:

- Click on the REPAIR button. The damaged item is diagnosed and repaired if necessary.

Profile Subsystem (Scout)

The Scout's Profile Subsystem allows the height of the unit to be adjusted from its standard 15 meters to a maximum of 18.5 meters and a minimum of 12 meters. This feature enhances covert operations, allowing the scout to hide more easily behind obstacles.

To adjust height:

- Click on the UP arrow to increase height, click on the DOWN arrow to decrease height. Click on the center button to return to normal height.

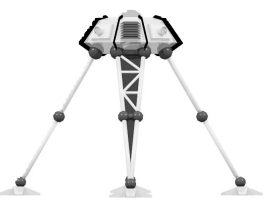
  NOTE: The scout can only move at standard height and will go to that mode automatically if the operator attempts to move it while at high or low profile.

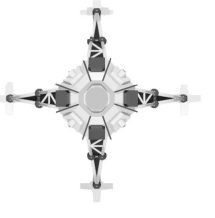
THE NET MATRIX

Introduction to the Net

Ultrabots operate primarily from a centralized power and communications system. Power is distributed to the units via a matrix of power transmitters known as *net relays*. The relays also double as communications transmitters, providing channels for inter-Ultrabot communication.

Because Ultrabot units are dependent upon the net for their communications and primary power, the net is of critical importance to the health and growth of the base as well as the fighting power and sphere of influence of the Ultrabot fighting force. Above all else, the net must be protected.





THE NET MATRIX

The net relays receive a highly focused beam of energy originating from the base, along with a laser communications beam. At the relay, an incoming power signal is locally broadcast at low power to serve as a power source for nearby Ultrabot units. It is then boosted and re-transmitted to other net relays further along the net.

This local broadcasting makes power and communications available to Ultrabots in *net proximity*. At the edge of net proximity (about half a kilometer from the nearest active relay), net power begins to drop. As a unit moves out of proximity, its on-board computer switches to battery power.

The Power of the Net

Each relay has four beam receiver / transmitters, each one capable of receiving or sending signals. When a signal is received, the relay automatically attempts to locate other relays nearby to link with. In this way, if a relay loses an incoming signal, another relay may be able to provide a replacement link.

Net Breakdown

If a relay does lose all of its incoming signals and no other nearby relays can fill the gap, the relay becomes inactive. It ceases beaming to other relays and stops broadcasting locally. This can cause a chain-reaction shut down of an entire section of the net and force nearby Ultrabot units to switch to battery power.

An inactive relay which is undamaged, however, can become reactivated again if a new source signal becomes available. Enemy relays can even be stolen by disconnecting them from their own source and then reactivating them from a friendly net. Proper precautions should be taken, when possible, to prevent the loss of relays in this way (for more information on net deployment patterns, see *Net Strategies*, page 78).

Communicating on the Net

Automatic messages are generated by the on-board computer as a result of some condition. An Ultrabot running an automatic control program for sentry duty, for example, might send an alert message in notification that enemy units have been detected.

STRATEGY

USING THE SITUATION ROOM (SR)

Effective use of the SR is the key to successfully commanding a campaign. With a large contingent of Ultrabot units and a large net to protect, the SR is the ideal location from which to assess the positions and status of units in the field and to watch for damage to the net. The main situation screen in map mode displays enough information for the campaign commander to make fast assessments. Unit positions and net layout are instantly available, as are timely communications from the field.

BATTLE TACTICS

The Humanoid is valuable in both offensive and defensive combat situations. Offensively, the Humanoid is best equipped to engage in combat. This 'bot is also useful accompanying Net Builders into unprotected territory, and watching for approaching enemies while the net is expanded.

In terms of speed, the fast-moving Scout can afford to be the most aggressive in terms of unescorted incursion into enemy territory. The Scout should be used to get an advance look at a region before additional units are sent in.

The Net Builder was designed for net-building, and it should be utilized primarily for this task, rather than offensive or reconnaissance missions; its large size, slow speed, and turning rate make the Net Builder an excellent target.

The two forward weapons can be used defensively to some effect but are no match against an enemy Humanoid. The tail missile is a formidable weapon; its internal targeting and the powerful warhead it carries allow it to home in on its target and inflict a wide radius of damage, virtually guaranteeing a successful hit. It should be used wisely, however, as each Net Builder is equipped with only a small supply of missiles, and its long reload time (about two minutes) limits its usefulness in an all-out battle.

NIGHT PLAY

Battles do not necessarily stop when the sun sets. In fact, the automated enemy units have no regard for the time of day. Enemy attacks are as likely to occur at midnight as at noon. Defense of the base is a 24 hour job.

Night Vision

Fortunately, the humanized Ultrabot is as comfortable in the dark as its alien cousin. All sensors are fully functional at night, and all three models are equipped with thermal cameras and sensor devices which function optimally in the dark. Proper use of these resources help to make up for decreased visibility and can allow an operator to provide a successful defense of the base.

Thermal imaging on the PDS is particularly effective since enemy units stand out more clearly from the background terrain heat at night. Under cool conditions, thermal visibility can be as much as 50% greater than either thermal or visual imaging during daylight hours.

Night Moves

When operating at night, defensive forces should be heavily weighted toward Humanoids and Scouts. The slow moving Net Builders should be used sparingly in hazardous areas and are best concentrated for relay repair away from the periphery of the net. When Net Builders must be used near the periphery, they should be escorted by Scouts in order to provide advance warning of approaching enemies.

Although the alien ‘bots will behave no differently at night, night raids on enemy nets are very popular with human commanders.

STRATEGY

NET STRATEGIES

The deployment of net relays is a subtle and important art. Net Builders can be programmed to deploy relays in a variety of patterns. In most cases, a few common patterns are the safest and most advantageous. Familiarity with all types of deployment patterns, however, gives the commander the greatest flexibility.

The following section describes each of the built-in deployment pattern programs available to Net Builder operators. For more information on using these programs, see *Initiating Auto-Programs,* page 55.

The Dense Net pattern is the standard deployment pattern for net relays and provides not only a large area of coverage, but also a high degree of redundancy. Any relay destroyed at the periphery causes little degradation to the system. Any unit inside the periphery is still in proximity to another relay. This deployment pattern, however, expands more slowly from base since more building is done laterally.

The Sparse Net pattern is very similar to the dense pattern except that it stretches relay distances to their transmission limits and, therefore, does not provide as much redundancy.

The Probe Net pattern may be preferable in areas where enemy attack is unlikely or when the need to quickly extend the net outweighs the danger. In the most extreme example, a single line of relays results in rapid expansion of the net in terms of distance from base, but also places the net in the most peril. The destruction of any relay in this formation could leave units out of proximity. Furthermore, the destruction of a relay in the middle of the line results in the deactivation of all relays after it, possibly stranding units too far away from the net to return or protect themselves on battery power.

One advantage to this pattern is that it allows for rapid penetration. It may be appropriate for supporting attacks upon an enemy base or net. A penetration patterned area of net should not be left unguarded for extended periods due to its vulnerable nature.

When deploying relays manually, it is important to note that a relay is neutral when deployed. It only become activated when it receives power from another nearby relay.

Attacking Enemy Nets

Attacking an enemy net is usually a straightforward matter; if an unguarded section of net is found, repeated blasts will eventually destroy a relay. Keep in mind that any attack on an active enemy relay alerts the enemy immediately. Net attacks should be brief, therefore, and at least one unit (preferably a Scout) should be dedicated to watching for approaching enemies using the Shadow / Pursue program.

When attacking a guarded area of net, the attack should be divided between the enemy units and the relays, with at least one unit for every enemy unit dedicated to defense, while other units fire on the relays. When using a mix of Humanoids and Scouts, a front line of Humanoids should defend against enemies with Scouts attacking relays from behind the line.

A more dangerous tactic, called *net segmentation*, can be extremely effective. Net segmentation occurs when the destruction of one or more relays results in other perfectly operational relays being cut off from the net. To do this, Ultrabots must move deeply into the enemy net and attempt to destroy enough relays to shut down a major portion of the net. If the enemy net is high density, this tactic is nearly impossible. For low density nets, segmentation may require the destruction of a few relays, while a penetration-patterned net can be segmented with a single relay kill.

Scoring

Ultrabot warfare is a game of survival. For some, that reduces the need for a scoring system. As with most things in life, though, a tally is kept for those who would like their success or failure to be evaluated objectively. Your score for each battle is displayed at the end of the scenario, and your total score is recorded in the upper-right corner of the Map Room screen.

A HISTORY OF THE EARTH-BOTS WAR

Detection

On January 8, 2193, scientists detected a large unidentified object in our solar system. Though it was millions of miles from any inhabited planet, its discovery sparked the imaginations of billions on Earth, Luna, and Mars. For the next several years the object was closely monitored and its origin heatedly debated among the scientific community and the population at large.

The visitor passed the orbit of Jupiter, erupting with electromagnetic signals as it scanned the planet and its moons. Reports filled the airwaves, and talk of first contact with an alien probe or intelligence swept the globes. As it penetrated farther into the system, the object appeared to scan each planet in the system, studying one after another. There was no response to the varied attempts at communication from Earth and the Martian and Lunar bases. After five months the object circled the sun and began its return trip out of the system.

Although the people of the Three Worlds were disappointed at the lack of initial communication, scientists assured them that the object was on a trajectory which would cause it to return in 90 years. Many were enthusiastic about this second chance for contact, and elaborate preparations were made.

After only 60 years, the alien probe returned. Two generations had passed and mankind was preparing for contact with an alien intelligence. Some envisioned a peaceful meeting of the minds — others predicted destruction of the human race. All waited in tense anticipation for the day they'd discover who'd been right after all.

As the object entered Earth's orbit, a small section disengaged from the main body and decelerated toward the planet. The main body of the object continued on its cometary orbit. Mankind held its breath and watched.

Scientists tried desperately to elicit a response from the craft as it rushed toward Earth. After a very short time they had exhausted all available means of communication, and still the visitor had exhibited neither hostile nor peaceful overtures. Now even the optimists were becoming uneasy, and their counterparts nodded with grim certainty. The world military manned its battle stations and prepared for the worst.

Confrontation

As the smaller object drew near, it separated into twelve distinct pieces which then entered Earth's atmosphere one after another. As the last fragment approached the outer atmosphere, it fired metal debris into polar and reverse-rotation orbits at several altitudes and in several different directions. This flak storm destroyed all defense and communications satellites within minutes, crippling Earth's defense and communications. Soon the military could offer only a token resistance.

The twelve landing craft touched down at various sites around the globe. As the dust settled, each one opened, and a fleet of mammoth robots emerged. The first of these to set foot on Earth soil were heavily armored fighting machines. 18 meters tall and roughly humanoid in form, these robots seemed indestructible, and quickly destroyed all defensive or inhabited areas in their immediate vicinity. As they fanned out to find new targets, they were followed by industrious insect-like robots resembling scorpions. These robots crawled about the surface of the planet, dropping laser-linked modules at intervals along their path. These modules were later discovered to be part of an elaborate alien power and communication network.

After two months, it appeared as if the earth had been conquered. The initial landing craft had been converted into bases where the robots were manufactured and repaired. Quick two-legged robotic scouts roamed freely around the planet seeking pockets of defense or inhabitation with their advanced detection equipment. Anything that wasn't completely shielded was immediately detected by the sconce and soon the warriors could be counted on to destroy it. As the last attempts at retaliation failed, it became apparent that the relay network was a powerful defensive force; when network modules were destroyed, or a tank entered net proximity, the robots were always aware of the intrusion.

Survival

The remaining people of Earth hid in subterranean bases where they struggled to survive and to develop weapons capable of defending themselves from the invasion. In the months after the arrival of the robots, work had been underway to reconstruct nuclear weapons which had been disarmed during the previous century. Once the biggest known threat to humanity, these weapons now appeared to be their only salvation from the killer robots.

After six months, survivors had constructed 120 nuclear missiles. In one swift attack, ten cruise missiles were launched at each alien base. Although several missiles were destroyed by robots in the near vicinity of the bases, in the end, each base was destroyed and all robots operating within the network stopped operating. Robots outside the net continued for a short time, then they too ground to a halt. Humanity emerged from hiding to find the robots stiff and silent.

Engagement

After 120 years, the alien object is on its third tour through the solar system. The peace and prosperity of mankind is only a memory. The robots are returning, but humanity is ready; in the years since the first invasion, the survivors have devoted themselves to the study of the robots and the alien network. New bases have been built, and human operated networks are up and running at and around each one. Each remaining robot has been reverse-engineered and retrofitted for human operation. When the aliens return, they'll be greeted by mankind's greatest weapon: the *ULTRABOTS.*

Game Design: *John Butrovich, David Seeholzer, John Garcia*
Programming: *John Butrovich, David Seeholzer*
Producer: *Paul Grace*
Assistant Producer: *Ed Gwynn*
Art / Graphics: *John Duggan, John Dugan, Rod Parong, Jim Sachs*
Character Design: *Terry Shakespeare, Creative Capers, Inc.*
3D Modeling: *Kelly Day, John Dugan*
Robot Animation: *Steve Segal*
Music: *Stew Perkins*
Sound: *Russell Brower*
Sound Driver: *Kyle Freeman*
Technical Director: *Scott Cronce*
Product Management: *Frank Gibeau*
Package Design: *The Design Office of Wong & YEO, San Francisco*
Package Art Direction: *Nancy Waisanen*
Documentation: *Marti McKenna, David Seeholzer*
Documentation Layout: *Laurie Lau*
Product Testing: *Kevin Hogan*
Quality Assurance: *Mike Lopez*

PROBLEMS WITH THE GAME?

If you are having a problem installing or playing the game, we want to help. First, please make sure you have read the installation and start-up section of your manual thoroughly, and make sure you have at least 2.5 megabytes free on your hard disk. If you have followed the directions in the documentation, and are still having trouble installing or operating the software, here are some hints that might help solve the problem. Before attempting any of the following suggestions, please make sure you are familiar with the DOS commands being used. Consult your DOS manual for more information.

TSRs / Device Drivers / DOS shells
TSR stands for Terminate Stay Resident. A TSR is a program, like SideKick® that automatically executes itself when you start up your computer from a hard drive. They are generally installed in your AUTOEXEC.BAT file. Device Drivers and DOS shells also are loaded automatically. They are usually installed in your CONFIG.SYS file.

These TSRs or Device drivers sometimes interfere with games, or take up valuable memory the game may need, and it is generally recommended that you not run any such programs, device drivers, or shells when attempting to install or play a game.

Checking the amount of available memory:
Many problems are caused by the machine not having enough AVAILABLE Conventional (Base) Memory. Although almost all machines have 640K of Conventional Memory, TSRs, Device Drivers, and other types of Memory Resident programs will take away from the amount of available base memory.

MS DOS 5.0 users can check the amount of available base memory by typing “MEM / C” and then pressing the ENTER key. Towards the bottom of the screen, the number in parenthesis to the right of “Largest Executable Program Size:” is the amount of available base memory. If you want to see which drivers are loaded into Conventional Memory and there is too much information to view on the screen at once, type “MEM / C ¦MORE” to view your computers memory information one screen at a time. Press any key to view the next screen.

NOTE: On certain machines you may only be able to access the MEM command from within the DOS directory. On these machines, type "C:\DOS\MEM /C" and then press the ENTER key to access the memory configuration.

MS DOS 3.3 users can check the amount of available base memory by typing "CHKDSK", which stands for Check Disk, and pressing ENTER. The last set of numbers, "Bytes Free" is the amount of available base memory. Note that this number is in thousands of bytes and that 1024 bytes make up one kilobyte (K).

If this number is less than 590,000 and you wish to use any of the sound options other than NO SOUND (under the Setup Options), you will need to free up additional memory.

DOS Boot Disk

If you are having trouble installing, experiencing unusual lockups, or other problems that do not appear normal, we suggest you try starting up your system with a DOS Boot disk. Here are the steps for creating a DOS boot disk. Please follow these steps exactly.

1. To create a DOS disk you will need a blank disk the same size as your A: drive.
2. Type C: and press ENTER
3. Place the blank disk into drive A:
4. Type FORMAT A: /s and press ENTER. Note: If you are formatting low density disks on a high density drive, use the following commands:
   5.25 inch low density disk: FORMAT A: /s /n:9 /t:40
   3.5 inch low density disk: FORMAT A: /s /n:9 /t:80

You will be prompted to insert a blank disk into drive A. Do so if you haven't. Press the ENTER key when you are ready.

5. Once the disk is finished formatting you will be asked whether you wish to format another or not. Answer N and press ENTER.
6. You now have a DOS boot disk.

Freeing up additional memory using the DOS boot disk:
Users WITHOUT a memory manager: It is not possible to free up much more base memory without using a memory manager, which allows one to access Expanded Memory (EMS) or Extended Memory (XMS). Without additional free memory, you must use the setup options to set the NO SOUND Option. Sound options are only available when using EMS or XMS memory.

Users with MS DOS 5: Rather than change your permanent system software configuration, you can use the Boot Disk and the EMM386 memory manager software included with MS DOS 5.0 to temporarily free up available memory.

READ THIS SECTION COMPLETELY BEFORE YOU BEGIN.

To configure the Boot Disk to free up OVER 610K of available base memory and to set up Expanded Memory (EMS):

1. Back up your CONFIG.SYS and AUTOEXEC.BAT files before editing them so that you can return to the originals if you have any problems. To back up the files type “COPY C:\CONFIG.SYS C:\CONFIG.BAK” and press the ENTER key, then type “COPY C:\AUTOEXEC.BAT C:\AUTOEXEC.BAK” and press the ENTER key.
2. Copy the CONFIG.SYS and AUTOEXEC.BAT files from the root directory (C:\)on your hard drive to the root directory (A:\) on the Boot Disk that you have just created.

   Example: At the C:> prompt, type “COPY C:\CONFIG.SYS A:\” and then press the ENTER key. To copy the AUTOEXEC.BAT file, type “COPY C:\AUTOEXEC.BAT A:\” and then press the ENTER key.

3. Open the copy of the AUTOEXEC.BAT file using the EDIT program from MS DOS 5.0:
   i. Type "CD\DOS" and then press the ENTER key.
   ii. Type "EDIT A:\AUTOEXEC.BAT" and press the ENTER key.
4. From the Boot Disk copy of the AUTOEXEC.BAT file, delete all lines, except the following:
   PROMPT PG
   <PATH>MOUSE.COM

   <PATH> is the directory in which your mouse driver is located, usually C:\, C:\MOUSE, C:\DOS or C:\WINDOWS.

   If you have a line that begins "Path=C:\;..." then you can keep that line also.

   Example: C:\DOS\MOUSE.COM

   NOTE: Your mouse line may be different if you are NOT using the MOUSE.COM mouse driver. Do not change this line if it looks different. Drivers that have a .SYS extension will be loaded through the CONFIG.SYS file and you should leave that line there when you are editing that file. If you have other questions about loading your particular mouse driver, consult your mouse or DOS manuals.

5. Save the edited AUTOEXEC.BAT file and open the Boot Disk copy of the CONFIG.SYS file from within EDIT.

   To save, press ALT-F to bring down the File menu and press the "S" key. To open, press ALT-F, press the "O" key and then type "A:\CONFIG.SYS" and press the ENTER key.

6. While still in EDIT, delete all lines from the Boot Disk copy of the CONFIG.SYS file EXCEPT the following:
   DEVICE=C:\DOS\HIMEM.SYS

DEVICE=C:\DOS\EMM386.EXE
DOS=HIGH,UMB

If you do not have these lines, enter them now. If the HIMEM.SYS and memory manager file are not located in the DOS directory, replace DOS with the name of that directory in the first two lines of the above example. If you have not moved these files, then they will be located in the DOS directory and your file should look identical to the three lines above.

Note: If you are NOT using the EMM386 memory manager, consult your manufacturers manual for more information on the proper way to load the program through the CONFIG.SYS file.

7. Save the edited CONFIG.SYS file and Exit the EDIT program.
   To save, press ALT-F and then press the “S” key.
   To Exit the Edit program, press ALT-F and then press the “X” key.

8. You now have a boot disk which will free up over 610K of available base memory and set up Expanded Memory (EMS). You can start your computer from this disk by inserting it into the A: drive and restarting your machine. Your computer will boot up to the A:> prompt. Type “C:” and then press the ENTER key to return to the hard drive. This boot disk bypasses the AUTOEXEC.BAT and CONFIG.SYS on your hard drive and starts up your computer in as clean a DOS environment as possible. Try re-installing the software if you were having trouble doing so, or try starting the software from the drive and directory you installed to.

   For more information on editing your CONFIG.SYS and AUTOEXEC.BAT files, or on changing your startup configuration, consult your DOS manual.

Technical Support

If you have questions about the program, our Technical Support Department can help. If your question isn't urgent, please write to us at:

Electronic Arts Technical Support
P.O. Box 7578
San Mateo, CA 94403-7578

Please be sure to include the following information in your letter:

- Product name
- Type of computer you own
- Any additional system information (like type and make of monitor, video card, printer, modem etc.)
- Type of operating system or DOS version number
- Description of the problem you're having

If you need to talk to someone immediately, call us at (415) 572-ARTS Monday though Friday between 8:30 am and 4:30 pm, Pacific Time. Please have the above information ready when you call. This will help us answer your question in the shortest possible time.

If you live outside of the United States, you can contact one of our other offices.

In the United Kingdom, contact: Electronic Arts Limited, P.O. Box 835, Slough SL3 8XU, UK. Phone (753) 546465.

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Within New Zealand call: Phone: +61 75 711 811 between 9am-5pm Eastern Standard Time

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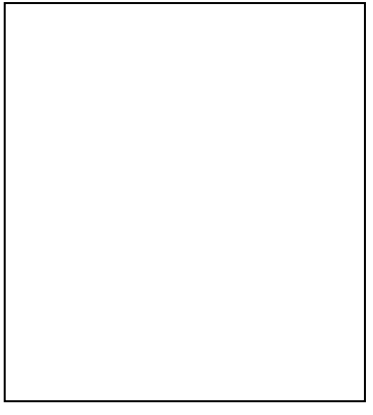

John Butrovich (left) has been in the industry for 10 years. He even has his name on some products.

David Seeholzer (right) has been programming games for five years and has been working on Ultrabots for more than 10% of his life.

John is older, so he hasn't spent as great a percentage of his life on Ultrabots.

David is interested in film, and is looking forward to seeing all of the movies he has missed while working on Ultrabots. He hears that Star Wars is pretty good.

John's primary hobby has been driving to and from work.

John and Dave swear they'll never do this again.

NOTE