Seawolf CD
Reference Card

CONTENTS

SYSTEM REQUIREMENTS

IBM AT or Compatibles.
Machine: 25-MHz 386 or faster required.
Hard drive installation required.
Standard Memory required: 600k.
EMS required: 3MB.
CD ROM drive
Operating System: DOS 5.0 or higher.
Graphics: VGA required.
Sound: Soundblaster or compatible for digital sound.
Mouse recommended.

INSTALLATION

NOTE: Seawolf™ requires at least 20 file handles set in your CONFIG.SYS file. Make sure that the line FILES = 20 or higher appears in your CONFIG.SYS before you install Seawolf. For more information, see *Problems With The Game* in this reference card.

1. At the DOS prompt, (usually C:\>), place the Seawolf CD in your CD ROM drive.

2. Type the letter of your CD ROM drive followed by **install** (example: **D:INSTALL**), and press **ENTER.**

3. Choose Full Install or Minimal Install. *Full Install* (14.5 MEGS) lets you load the entire game onto your hard drive and listen to CD-quality music. *Minimal Install* (3 MEGS) lets you load only a portion of the game onto your hard drive and listen to standard FM-quality music. Use the arrow keys to highlight your choice, then press **ENTER.**

   NOTE: If you choose Full Install you will still be asked to configure your music driver, but the music will play only from the CD-ROM.

   NOTE TO DISK COMPRESSION USERS: Seawolf uses true hard drive space when installing. For example, if the hard drive to which you are installing is compressed at a ratio of 2:1, you will need at least 29 MEGS free (Full Install) or 6 MEGS free (Minimal Install). Consult your disk compression utility's documentation for more information.

4. Follow the instructions on the screen to install.

5. After the program installs to your hard drive, the message "Do you want to auto-detect for the presence of a SoundBlaster? (y/n)" appears. Type **Y**.

6. If you have a sound card correctly connected to your computer, the message appears in red at the bottom of the screen, "[name of sound card] or compatible detected at base address: (Variable Number) IRQ: (Variable Number)." It is recommended that you use the address determined by the program. If you wish to change the address, press **C** to reconfigure the hardware.

7. A box at the top of the screen presents a list of the sound cards compatible with Seawolf, while the green box provides information about each sound card. Highlight the name of your soundcard with the up and down arrow keys, then press **ENTER.**

8. A box appears asking, "Are you ready to test the sound driver you have selected? (y/n)." Make sure speakers or earphones are plugged into the jack on the back plate of your sound card, then, type Y.

   You hear some music. A box appears asking you, "Did the sound play ok? (y/n)"

   If you answer **N**, you are asked to choose another sound card.

   If the message "Failed to initialize sound driver" appears, try choosing another sound card, or select "No Sound Card" from the list of choices if there is not a driver available for your sound card.

If the sound played, press **Y.** You will be asked to choose a music driver.

9. To test the FM sound, highlight your music card, then press **ENTER.**

10. A box appears asking "Are you ready to test the sound driver you have selected? (y/n)." Type **Y.**

    A box appears asking, "Press 1 - 4 to segue music. Is the music playing ok? (y/n)"

    If you answer **N**, you are asked to choose another MIDI driver.

    If this message appears: "Failed to initialize music driver" try choosing another MIDI driver, or select **No MIDI Driver** from the list if there is not a driver available for your card.

    If you answer **Y**, the program returns you to the Installation menu.

    To change your configuration, go to the Seawolf directory, type SETUP, then press ENTER.

A Note to Gravis Ultrasound Users: Before you can configure Seawolf to run with you sound card, you must install the ULTRAMID.EXE driver. For your convenience, we've provided this driver.

To install the driver, type ULTRAMID{space}-NSEAWOLF.INI from the Seawolf directory to which you have installed the game. This command installs Ultramid with the Seawolf sound configuration file.

LOAD THE GAME

1. Type the name of the drive on which you installed *Seawolf* (example: **C:**), and press **ENTER.**

2. Type **CD\SEAWOLF** (or the name of the directory), then press ENTER.

3. Type **seawolf** and press **ENTER.**

    To bypass the introduction, press the **SPACEBAR.**

HOTKEYS

Note: The Alt key can be substituted for the Ctrl key.

Ctrl-A - deploy towed array
Ctrl-B - clear baffles
Ctrl-C - bring up chat screen
Ctrl-D - go down a thermal
Ctrl-E - bring up depth menu
Ctrl-F - bring up waterfall
Ctrl-G - pause game
Ctrl-H - change heading
Ctrl-I - identify target
Ctrl-J - set depth
Ctrl-K - target tracking on/off
Ctrl-L - bring up logbook
Ctrl-N - drop noisemaker
Ctrl-P - send active sonar ping
Ctrl-R - message review on/off
Ctrl-S - reverse stereo in waterfall
Ctrl-T - select target
Ctrl-U - go up a thermal
Ctrl-V - voice mail
Ctrl-W - set a waypoint
Ctrl-X - end scenario
Ctrl-Z - set secondary waypoint

Backspace - change heading
Tab - identify target (After Ctrl-T, the Tab key cycles through targets.)
'(single quote) - target info on/off
(arrow keys) -move target info window
; (semi-colon) - weapons screen on/off

. (period) - rotate view right (F8, F9 views only)
, (comma) - rotate view left (F8, F9 views only)
1 - set speed to 1/4
2 - set speed to 1/2
3 - set speed to 3/4
4 - set speed to full
5 - set speed to flank
6 - turn time compression off
7 - 2 X time compression
8 - 3 X time compression
9 - 4 X times compression
0 - engines to full stop
DEL - clears last waypoint(s) then clears secondary waypoint.
INS - Turns Autopilot on
+ - zoom in (F6, F7 views only)
 - - zoom out (F6, F7 views only)
F1 - conn menu
F2 - scp menu (Ship Control Panel)
F3 - weapons menu
F4 - sonar menu
F5 - radio room
F6 - low-res overhead map view
F7 - hi-res overhead map view
F8 - 3D contour image view
F9 - periscope view
F10 - remote camera view
ENTER - grid on/off

WEAPONS

The weapons are broken down by POWER, SPEED, DETECTION and RANGE. *Power* refers to the maximum number of damage points a particular weapon can inflict. *Speed* refers to the maximum speed of the particular weapon in Knots. *Detection* refers to the ability of the particular weapon to find targets. The higher the number, the higher its sensitivity. *Range*, listed for friendly weapons only, refers to the approximate maximum range in miles of the particular weapon.

ENEMY Weapons

	POWER	SPEED	DETECTION	RANGE
SS-N-14 Missile	75	60	16	
SS-N-15 Missile	80	60	18	
Type 45 Torpedo	60	65	16	
Type 53 Torpedo LR	80	35	15	
Type 53 Torpedo HS	80	45	15	
Type 66 Torpedo HS	100	65	18	

FRIENDLY Weapons

	POWER	SPEED	DETECTION	RANGE (miles)
Harpoon	255			
Tomahawk	255			
(Use against surface vessels only.)				
Sea Lance Missile	100	55	20	
(Can be used against subs, but best used against surface vessels.)				
MK-48 Torpedo LR	80	40	22	10-12
(Best used against slower subs and all surface vessels.)				
MK-48 Torpedo HS	80	55	18	3-6
(Best used against the Akula and Alfa Class subs at less the 1 mile.)				
MK-48 Wakehoming	80	40	20	10-14
(Most effective against surface vessels by homing in on their wake.)				
MK-48 Stasis	80	50	18	3-6
(Drop to the bottom of the ocean to wait for an unsuspecting vessel to pass over.)				

QUICK START

As a quickstart to *Seawolf*, you'll execute the first mission, "Ivan Marches." Playing the mission should acquaint you with many of the game controls and few of the strategies.

1. **Select your mission.** Load *Seawolf* following the instructions on this Reference Card. From the Main Menu, select **ANY MISSION**. The page opens to Mission #1, "Ivan Marches."

   Read the background to the mission, and then select **ORDERS** from the menu. Your orders inform you that you must locate and identify some Russian ballistic missile submarines that are currently traveling with a Russian task force. During the course of the mission, you must avoid being detected by the submarines or the surface ships.

Once you've read your mission orders, select **OK**. Now select **GO** to begin the mission.

2. **Zoom out on the Top-Down Map.** You begin every mission in Top-Down Map view. The Target Information Window and STATIONS Menu are automatically displayed.
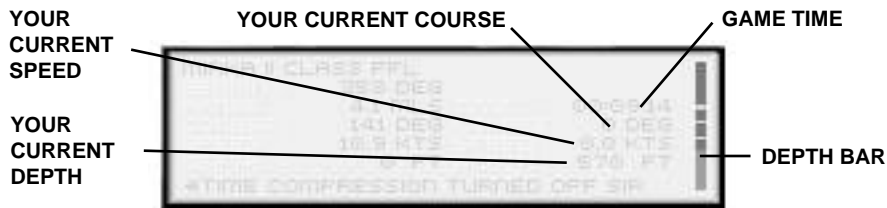

TARGET INFORMATION WINDOW

THE *SEAWOLF*

STATIONS MENU

You're currently zoomed in on the Top-Down Map. To get a wider view of the environment, you need to zoom out on the map. Press **Esc** to remove the STATIONS Menu. Now hold down the **minus** (-) key to zoom out. (If you have a mouse, you can zoom out by holding down the right mouse button.)

Note: You can't zoom out while a menu is displayed. You must hide any menus before setting the zoom level.

3. **Pause the game.** As you follow the quickstart instructions, you'll want to pause the game periodically in order to avoid losing valuable game time. Press **Ctrl-G** whenever you need to read instructions. To return to the game, press the spacebar.

4. **Be aware of your situation.** Take a look at the Target Information Window.

YOUR CURRENT SPEED

YOUR CURRENT COURSE

GAME TIME

YOUR CURRENT DEPTH

DEPTH BAR

TARGET INFORMATION

Target information appears on the left — this information appears only when you've targeted a vessel. Information on the Seawolf is displayed on the right. Note that the *Seawolf* is currently at a depth of 150 ft, and the ship is at a standstill (0 kts).

Now take a look at the Depth Bar. This bar displays your submarine's depth in relation to the surface, thermal layers, and the ocean floor.

SURFACE

YOUR DEPTH (GREEN)

THERMAL LAYER (BLUE)

OCEAN FLOOR
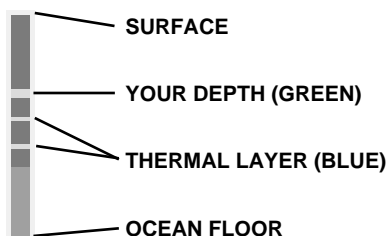
A thermal layer is a layer of seawater with a contrasting temperature to the rest of the ocean. Thermal layers are critical in submarine warfare because they bend sound waves — they can be used as "screens" behind which a submarine can effectively hide from enemy sonar.

5. **Deploy your towed array.** A towed array is a long cable with a series of microphones along its length. This device is towed behind the submarine and improves your sonar operator's ability to target and identify an object in the water.

   To deploy the towed array, press **Ctrl-A.** The crew immediately begins reeling out the cable.

6. **Go to the Waterfall Display.** With your towed array deployed and your submarine at a standstill, your sonar detection is at its absolute highest. It's now time to look for sonar contacts.

   A contact is nothing more than a sound. The source of the sound can be anything: a submarine, surface ship, patrolling helicopter, or a large group of sea creatures. Listening to sonar contacts and guessing the probable nature of each one is the first step in locating and identifying the enemy.

   You can see sonar contacts at the Waterfall Display.To view the Waterfall Display, press **Ctrl-F.**

   You should now read up on the Waterfall Display. *Understanding the Waterfall Display is critical to playing Seawolf and winning missions.* Pause the game and open your game manual to the section titled *The Sonar Waterfall Display.* Read the section entirely, returning occasionaly to the game in order to try out various key commands .

   Once you feel comfortable with your knowledge of the Waterfall, continue the mission.

7. **Target & identify the surface contacts.** You know from your mission orders that the ballistic missile submarines are traveling with the Russian task force. The task force will obviously be much noisier than the SSBNs and therefore easier to find, so you should look for the task force first.

   When you first go to the Waterfall Display, you see a number of surface contacts (green).

YOUR HEADING

SURFACE CONTACT (GREEN)

SURFACE CONTACT (GREEN)

SURFACE CONTACT (GREEN)
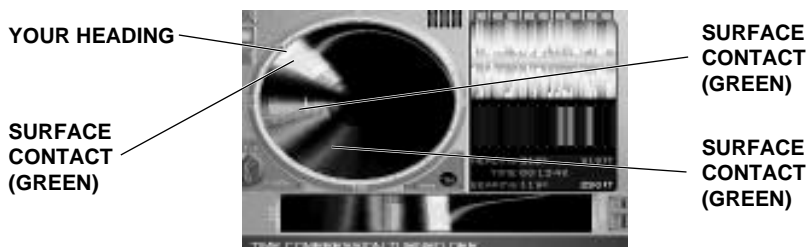
In order to figure out which contact is the task force, you need to help your sonarman target and identify each of the contacts. This is simply a matter of a) changing your heading until your submarine is pointed at a contact, and b) waiting for your sonarman to identify the contact.

To head in the direction of a surface contact, press a **cursor** key or a mouse button to move the red dot onto one of the green contacts.
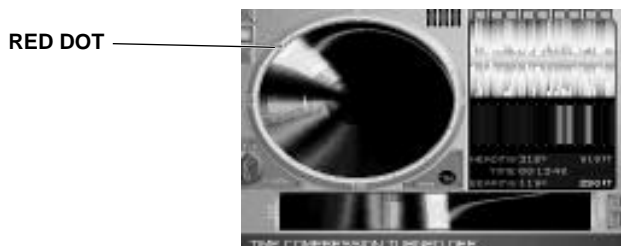
RED DOT

Press **Ctrl-H.** The green dot that indicates your heading slowly rotates until it's under the red dot — your submarine is heading toward the contact.

Now you have to wait for your sonarman to target and identify the contact. Press **Esc** to return to the Top-Down Map.

After a short while, one or more grey squares appear, indicating unknown surface targets. As your sonarman continues to listen, these markers may turn into yellow squares, indicating "neutral commercial ships." If so, return to the Waterfall display and head toward one of the other contacts. Repeat this procedure until you see the red diamond markers that indicate Russian warships.

8. **Search the thermal layers.** Once you're pointed at the task force, you're headed in the right direction. Now the only trick is to target and identify the ballistic missile submarines.

In order to maintain silence, SSBNs normally travel slowly at their lowest possible depth, keeping as many thermal layers as possible between themselves and the surface. A good strategy at this point would be to drop below one or more thermal layers and listen. Press **Ctrl-D** to dive below the next thermal layer. Return to the Waterfall Display and check for submerged contacts (blue) in the direction of the task force. If none

appear, drop another thermal layer and check again.

If you do find a blue submerged contact somewhere in the direction of the task force, head directly toward it. Check the Top-Down Map periodically for grey "unknown submerged target" markers or red Russian submarine markers.

ENEMY SUBMARINE (RED)

UNKNOWN SUBMERGED CONTACT (GREY)

9. The mission is determined a success once the submarines are identified.

PROBLEMS WITH THE GAME?

If you are experiencing problems or receiving error messages while installing or playing the game, we can help.

First, please make sure that you have read the Installation and the System Requirements section of this technical reference card thoroughly.

The following chart should help you correct some of the difficulties you may encounter with *Seawolf*.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Getting a message, "Sorry, Seawolf requires the presence of an expanded memory manager to run."	No expanded memory manager loaded in the CONFIG.SYS.	Refer to the DOS Boot Disk section of this Reference Card to setup EMS.
Getting a message, "Not enough EMS available to run Seawolf. Needs at least 2608k free. Have 'DEVICE=\DOS\EMM386. EXE 2608' in your CONFIG.SYS."	Your System does not have enough free EMS.	Refer to the DOS Boot Disk section of this Reference Card to acquire more EMS.
Getting a message, "Not enough file handles. Set FILES=20 in your CONFIG.SYS.	The FILES= line in your CONFIG.SYS is less than 20 or it's not there.	Change or add the line FILES=20 in your CONFIG.SYS file. Refer to the DOS Boot Disk section of this Reference Card.
After typing SEAWOLF, the Sound Card Configuration keeps coming up.	The FILES= line in your CONFIG.SYS is less than 20 or it's not there.	Change or add the line FILES=20 in your CONFIG.SYS file. Refer to the DOS Boot Disk section of this Reference Card.

NOTE: Before attempting any of the following suggestions, please make sure that you are familiar with the DOS commands being used. Consult your DOS manual.

EXTENDED VS. EXPANDED MEMORY

Extended memory (XMS) is the memory above the 1 MB mark of your RAM that is generally not accessible by MS-DOS programs, but can be used by other applications, like Windows™ based programs. Expanded memory (EMS) is the memory above 1 MB of RAM that is usable by MS-DOS programs.

In order to gain access to EMS memory, you need to use a memory manager (such as EMM386) to convert a certain portion of your RAM to EMS. Seawolf requires 3072k of free EMS memory.

CHECKING THE AMOUNT OF AVAILABLE MEMORY:

You can verify the amount of memory available to your system by typing **MEM** at the C:\> prompt. The information will be displayed differently depending on your version of DOS; however, the information is essentially the same. "Largest executable program size" tells you the amount of free conventional memory. "Bytes

free EMS memory" (MS-DOS 5.0) or "Free Expanded (EMS)" (MS-DOS 6.0) indicates how much free EMS memory you have. (**NOTE:** 1 MB=1024k=1048576 bytes.) If these numbers do not meet the minimum requirements listed in the System Requirements section of the technical reference card, you will need to free up more memory.

DOS BOOT DISK

Using a DOS boot disk allows you to free up more memory without altering the CONFIG.SYS and AUTOEXEC.BAT files on your hard drive. Booting your computer with a DOS boot disk does not prohibit you from accessing your hard drive; it merely provides a different method for configuring your memory. After you create a DOS boot disk, you will copy your CONFIG.SYS and AUTOEXEC.BAT files onto the boot disk and modify these copies. We recommend using this system so you do not alter the CONFIG.SYS and AUTOEXEC.BAT files on your hard drive, which may affect your memory configuration for running other applications.

Following are the steps for creating a DOS boot disk. Please follow these steps exactly. **NOTE:** To create a DOS boot disk you must use a disk that will fit in your A: drive. **Your computer will not boot from the boot disk if it is inserted in the B: drive.**

1. Type **C:** and press **ENTER.**
2. Place the blank disk into drive A:.
3. Type **format a:/s** and press **ENTER.**

Note: If you are formatting low density disks on a high density drive, use the following commands in place of step 3:

5.25" low density disk: Type **format a:/s /n:9 /t:40** and press **ENTER.**
3.5" low density disk: Type **format a:/s /n:9 /t:80** and press **ENTER.**

You will be prompted to insert a blank disk into drive A:. Do so if you haven't already, then press **ENTER.**

4. Once the disk has finished formatting, you will be asked to label (name) the disk. Type in a label or press **ENTER** for no label.

5. You will now be asked whether you wish to format another disk. Type **N** and press **ENTER.**

You now have a DOS boot disk. Rather than change your permanent system software configuration, you can use the DOS boot disk and the HIMEM and EMM386 memory manager software included with MS DOS 5.0 (or greater) to temporarily free up conventional memory and set up Expanded (EMS) memory. To do so, follow the instructions below.

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

READ THIS SECTION COMPLETELY
<u>BEFORE</u> YOU BEGIN.

NOTE: The following section assumes that your root directory is C:. If your root directory is other than C:, substitute the correct letter in the following commands.

To configure your DOS boot disk to free up additional conventional memory and to set up the required amount of Expanded (EMS) memory:

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:

    i. Type **copy c:\config.sys c:\config.bak** and press **ENTER.**
    II. Type **copy c:\autoexec.bat c:\autoexec.bak** and press **ENTER.**

2. Copy the CONFIG.SYS and AUTOEXEC.BAT files from the root directory on your hard drive (C:\) to the root directory on the boot disk that you have just created (A:\):

    i. At the C:\ prompt, type **copy c:\config.sys a:** and press **ENTER.**
    ii. Type **copy c:\autoexec.bat a:** and press **ENTER.**

3. Open the boot disk copy of the AUTOEXEC.BAT file (on A:) using the EDIT program from MS DOS 5.0 or greater:

To open the file from the C:\ prompt:

    i. Type **cd\dos** and press **ENTER.**
    ii. Type **edit a:\autoexec.bat** and press **ENTER.**

4. From the boot disk copy of the AUTOEXEC.BAT file, delete all of the lines except the following:

    Path=C:\DOS
    PROMPT PG
    LH C:\MOUSE\MOUSE.COM
    <path>\MSCDEX.EXE [parameters regarding individual CD-ROM
                        hardware setup]

The MSCDEX.EXE CD-ROM driver will be located in a directory that is created when your CD-ROM hardware is installed.
MS DOS 6.0 users: the MSCDEX.EXE driver is also located in teh C:\DOS>directory.

[paramters regarding individual CD-ROM harware setup] will vary depending on your particular CD-ROM player. This information should already be included after the MSCDEX.EXE driver in the AUTOEXEC.BAT file you have just copied. For additional information regarding the installation and setup of your CD-ROM player, please consult your CD-ROM documentation.

C:\MOUSE represents the directory your mouse driver may be located. If you do not find your mouse driver in the C:\MOUSE directory or do not have a C:\MOUSE directory try looking in a different directory, like C:\, C:\DOS, C:\WINDOWS, C:\WINDOWS\SYSTEM, etc...

Example: C:\DOS\MOUSE.COM

NOTE: If your mouse line looks different from the examples above, you may not be using the MOUSE.COM mouse driver. <u>Do not</u> change this line if it looks different from the examples above. Drivers with a .SYS extension will be loaded through the CONFIG.SYS file and should be left in place when you are editing that file. If you have other questions about loading your particular mouse driver, consult your mouse or DOS manuals.

Sound Card Users: If you are using a sound card that is Soundblaster-compatible, but is not directly supported by *Seawolf*, you will need to use the Soundblaster emulation mode of your sound card. Soundblaster emulation is usually accessible through a line in your AUTOEXEC.BAT file which should NOT be deleted when editing the file. For more information regarding Soundblaster emulation, consult your sound card manual.

Example: SET BLASTER=A220 I5 D1 T4

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, then type **S**.
To open, press **ALT-F**, type **O**, then type **a:\config.sys** and press **ENTER.**

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 3072 RAM
    DOS=HIGH,UMB
    FILES=20
    DEVICEHIGH=C:\<CD-ROM driver>

    <CD-ROM driver> will vary depending on your particular CD-ROM player. If your CONFIG.SYS file does not contain the last line of the above example, please consult your CD-ROM documentaion.

MS-DOS 6.0 USERS: If you are using the Doublespace utility provided with DOS 6.0, you will need to load the DBLSPACE.SYS device driver into high memory in order to free up additional conventional memory. This can be done by adding an additional line to the CONFIG.SYS file on your boot disk. The CONFIG.SYS file should contain the following lines:

    DEVICE=C:\DOS\HIMEM.SYS
    DEVICE=C:\DOS\EMM386.EXE 3072 RAM
    DOS=UMB
    DOS=HIGH
    DEVICEHIGH=C:\DOS\DBLSPACE.SYS /M
    FILES=20
    DEVICEHIGH=C:\<CD-ROM driver>

    <CD-ROM driver> will vary depending on your particular CD-ROM play-

er. If your CONFIG.SYS file does not contain the last line of the above example, please consult your CD-ROM documentaion.

Your CONFIG.SYS file should now look like one of the above examples. If it does not, edit it or add the above lines now to make it identical to the text above. The one exception may be that the C:\DOS section of the HIMEM.SYS and EMM386.EXE lines may read C:\WINDOWS. You may leave these lines with the C:\WINDOWS.

Examples: C:\WINDOWS\HIMEM.SYS
C:\WINDOWS\EMM386.EXE 3072 RAM

Windows Users: Be sure to remove the text **"NOEMS"** from the EMM386.EXE line and add **"3072 RAM"** in its place.

7. Save the edited CONFIG.SYS file and exit the EDIT program.

To save, press **ALT-F**, then type **S**.
To exit the Edit program, press **ALT-F**, then type **X**.

You now have a boot disk which should free up enough conventional memory and set up enough Expanded (EMS) memory to run the program. The boot disk bypasses the AUTOEXEC.BAT and CONFIG.SYS files on your hard drive and configures your memory based on the edits to the AUTOEXEC.BAT and CON-FIG.SYS files on your boot disk. If you were having trouble installing your game, you can now try reinstalling. If you were having trouble loading your game, try starting the software from the directory to which you installed.

To start up your machine using the DOS boot disk:

1. Insert the DOS boot disk into drive A:, then restart your machine. Your computer will boot up to the A:\ prompt.

2. Type **C:** and press **ENTER** to return to your hard drive.

NOTE: If you want to return your system to its normal memory configuration, simply remove the DOS boot disk from the A: drive and restart your machine.
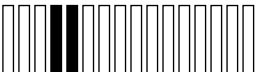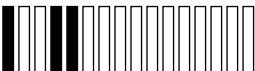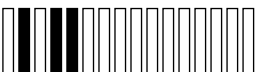
For more information on editing your CONFIG.SYS and AUTOEXEC.BAT files, or on changing your startup configuration, consult your DOS manual.

0) Jianghu FFL

1) Haruna DD

2) Takatsuki DD

3) Aligator III LST

4) Ivan Rogov LPD

5) Kiev CV

6) Kirov CGH

8) Koni FF

9) Kresta I CG

10) Kresta II CG

11) Krivak I FFG

12) Krivak II FFG

13) Kynda CG

14) Mirka II FFL

15) Moskva CGH

16) Nanuchka III FFL

18) Sayany Salvage/Rescue

19) Slava CG

20) Sovremenny DD

21) Adams DDG

22) Garcia FF

23) Gunston Hall LSD

24) Iowa BB

25) Kidd DDG

26) Knox FF

27) Long Beach CGN

28) Nimitz CVN

29) Oliver Hazard Perry FFGH

30) Sacramento AOE

31) Spruance DD

33) Ticonderoga DDG

34) Virginia CGN

35) Amazon FFG

36) Ark Royal CVL

37) Edinburgh DDH

39) Vittorio Veneto CVL

40) Supply Type I

41) Supply Type II

42) Oil Tanker

43) Cargo Ship
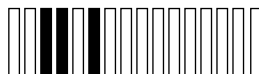
44) Merchant Ship Type 1

45) Merchant Ship Type 2

50) Charlie SSGN

51) Echo II SSGN

52) Yankee SSBN

53) Delta I SSBN

54) Delta II SSBN

55) Delta III SSBN
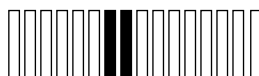
56) Delta IV SSBN

57) Typhoon SSBN
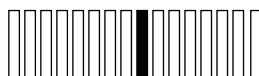
58) Resolution SSBN

59) Benjamin Franklin SSBN
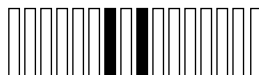
60) Ohio SSBN

61) November SSN
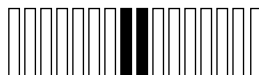
62) Victor I SSN

63) Victor II SSN

64) Victor III SSN

SIGNAL ANALYSER SIGNATURES

65) Alfa SSN

66) Akula SSN

67) Han SSN

68) Trafalgar SSN

69) Rubis SSN

70) Permit SSN

71) Sturgeon SSN

72) Los Angeles SSN

73) Seawolf SSN

74) Kilo SS

75) Foxtrot SS

76) Walrus SS

77) Whale (Biological)

78) Dolphin (Biological)

79) Noise Maker

80) German Type 209 SS

82) Spurious Biological 1

83) Spurious Biological 2

100) Sikorsky Seahawk

101) Kamov Ka-25 Hormone
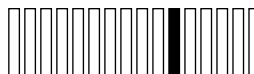
102) P-3 Orion Antisub

107) Anti-ship Missile

108) SS-N-14 Anti-Submarine

109) SS-N-15 Anti-Submarine

110) Asroc Anti-Submarine

113) Harpoon Missile

117) Tomahawk Cruise Missile

118) Type 66 Torpedo (HS)

119) Type 45 Torpedo

120) Type 53 Torpedo (LR)

121) Type 53 Torpedo (HS)

126) MK-48 - Long Range Torpedo

127) MK-48 - High Speed Torpedo

128) MK-48 - WakeHoming Torpedo

129) MK-48 - Stasis Torpedo

130) MK-50 - Sea Lance

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