

NAVAL OPS™

COMMANDER



100cm75 Caliber AIM-120AMRAAM
80cm75 Caliber 53.3cm High Spec
12.7cm used for both Gun SS-N-12
Newton Ordnance AN-M3 20mm
Improved Newton Ordnance Trans
Aerial krypton AN-M3 20mm
Short Range Anti-Air Autonomous
Contact Mine Colt Mk12 20mm

Proximity Mine DEFA30M552 30mm
Contact Mine Spreader System
Missile Launcher RBU-8000
Torpedoes Aden Mk4 30mm Small
Oxygen Torpedoes 57mm Automat
Guided Torpedoes 83M-109 Torus
Flamethrower 2 RIM-2 Terrier
12.7cm High Angle 50kg Anti-sub
Flame Eater 13.4cm Multi-use Gun
Browning 7.7mm 12cm45 Caliber
Hispan MKV20mm 18inMk1 Torp
MG151/20 20mm 7.62cm High Ang

Browning 7.62mm in water explos
AN-M2 20mm RUR-5 Asroc
7.62mm Type 98 for conformity, 30
7.7mm Ho 203 GWSR-3
12.7cm 20mm Torpedoes



WARNING: READ BEFORE USING YOUR PLAYSTATION®2 COMPUTER ENTERTAINMENT SYSTEM.

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a television screen or while playing video games, including games played on the PlayStation 2 console, may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy. If you, or anyone in your family, has an epileptic condition, consult your physician prior to playing. If you experience any of the following symptoms while playing a video game – dizziness, altered vision, eye or muscle twitches, loss of awareness, disorientation, any involuntary movement, or convulsions – IMMEDIATELY discontinue use and consult your physician before resuming play.

WARNING TO OWNERS OF PROJECTION TELEVISIONS:

Do not connect your PlayStation 2 console to a projection TV without first consulting the user manual for your projection TV, unless it is of the LCD type. Otherwise, it may permanently damage your TV screen.

USE OF UNAUTHORIZED PRODUCT:

The use of software or peripherals not authorized by Sony Computer Entertainment America may damage your console and/or invalidate your warranty. Only official or licensed peripherals should be used in the controller ports or memory card slots.

HANDLING YOUR PLAYSTATION 2 FORMAT DISC:

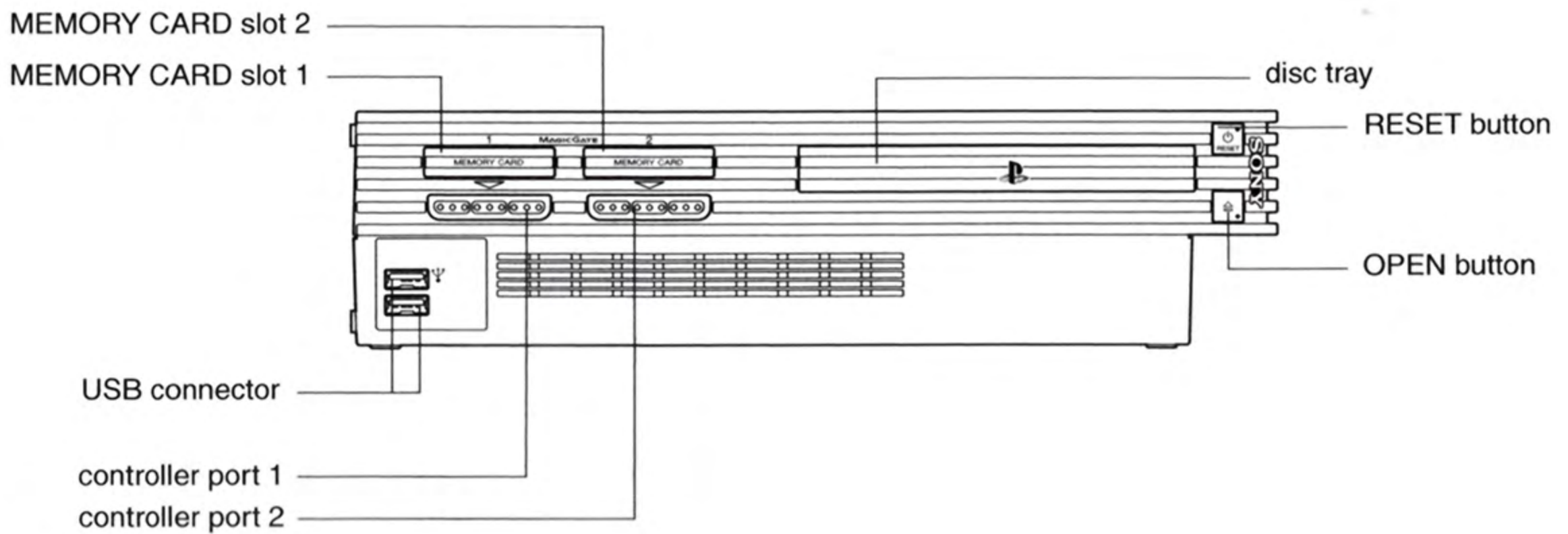
- This disc is intended for use only with PlayStation 2 consoles with the NTSC U/C designation.
 - Do not bend it, crush it or submerge it in liquids.
 - Do not leave it in direct sunlight or near a radiator or other source of heat.
 - Be sure to take an occasional rest break during extended play.
 - Keep this compact disc clean. Always hold the disc by the edges and keep it in its protective case when not in use. Clean the disc with a lint-free, soft, dry cloth, wiping in straight lines from center to outer edge.
- Never use solvents or abrasive cleaners.



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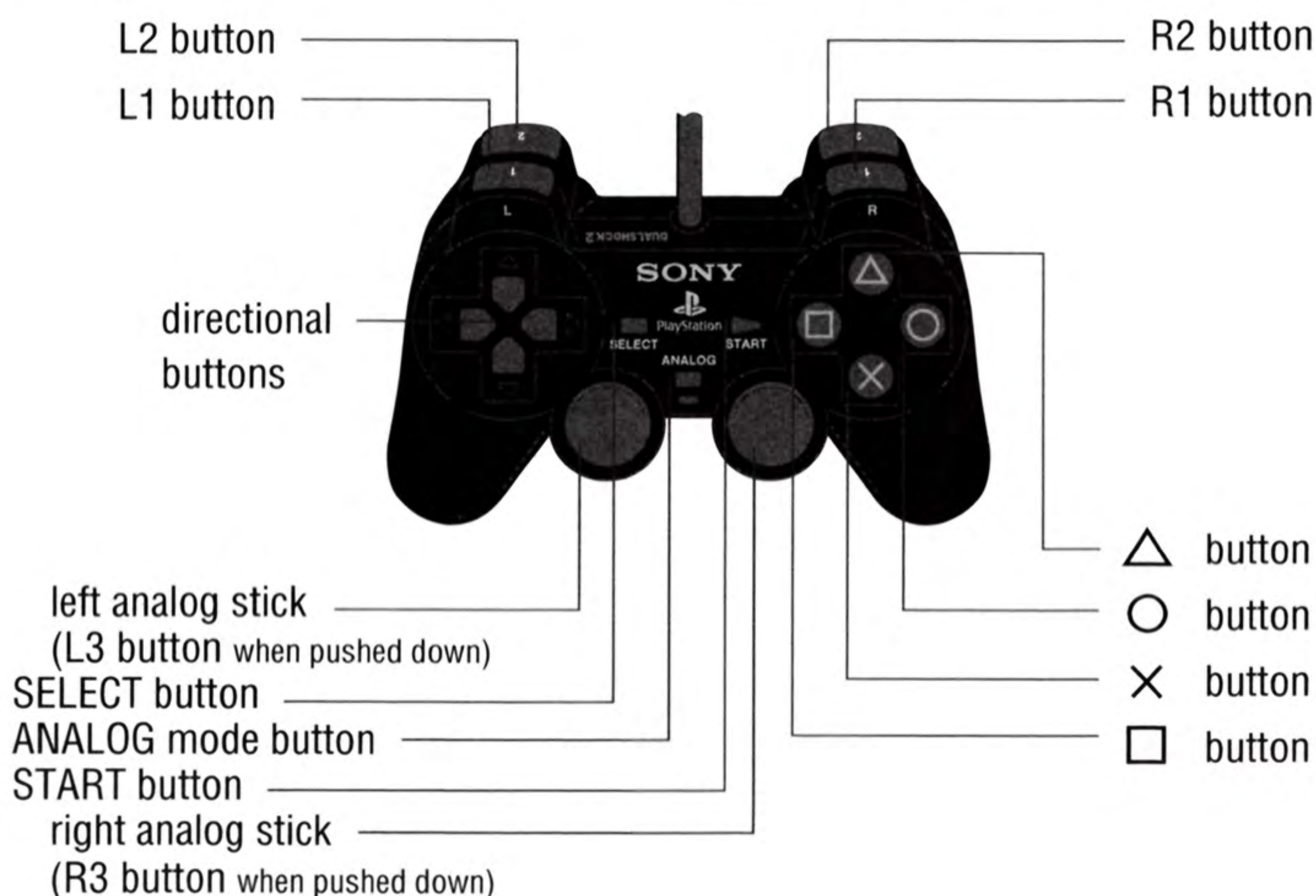
Getting Started



Set up your PlayStation®2 computer entertainment system according to the instructions in its Instruction Manual. Make sure the MAIN POWER switch (located on the back of the console) is turned on. Press the RESET button. When the power indicator lights up, press the open button and the disc tray will open. Place the **Naval Ops™: Commander** disc on the disc tray with the label side facing up. Press the open button again and the disc tray will close. Attach game controllers and other peripherals, as appropriate. Follow on-screen instructions and refer to this manual for information on using the software.

Starting Up

DUALSHOCK®2 ANALOG CONTROLLER CONFIGURATIONS



S T O R Y

In a world hanging on to an unstable peace, the balance of power was evenly divided between the two largest nations, Navishia and Virshia.

A sudden change shook the delicate military balance between the two countries to its very core. Without warning, Virshia invaded its neighbors, pursuing a policy of aggressive territorial expansion.

Pockets of resistance popped up around the world, but even Navishia, supposedly equal in strength to Virshia, was unable to stop the onslaught and the chaos engulfed its own Mission Command, the heart of the resistance.

After so many years of balance, it seemed unthinkable that one of the superpowers could have emerged as such an overwhelming force. Something must have thrown off the balance of power. Reports came from around the globe, detailing what happened. The attacks were carried out by giant weapons, which appeared and then vanished into the shadows, leaving a path of destruction in their wake.

Apparently, Virshia had somehow developed a new technology beyond anything modern science could even comprehend. These so-called superships were being mass-produced and even the fiercest resistance was futile.

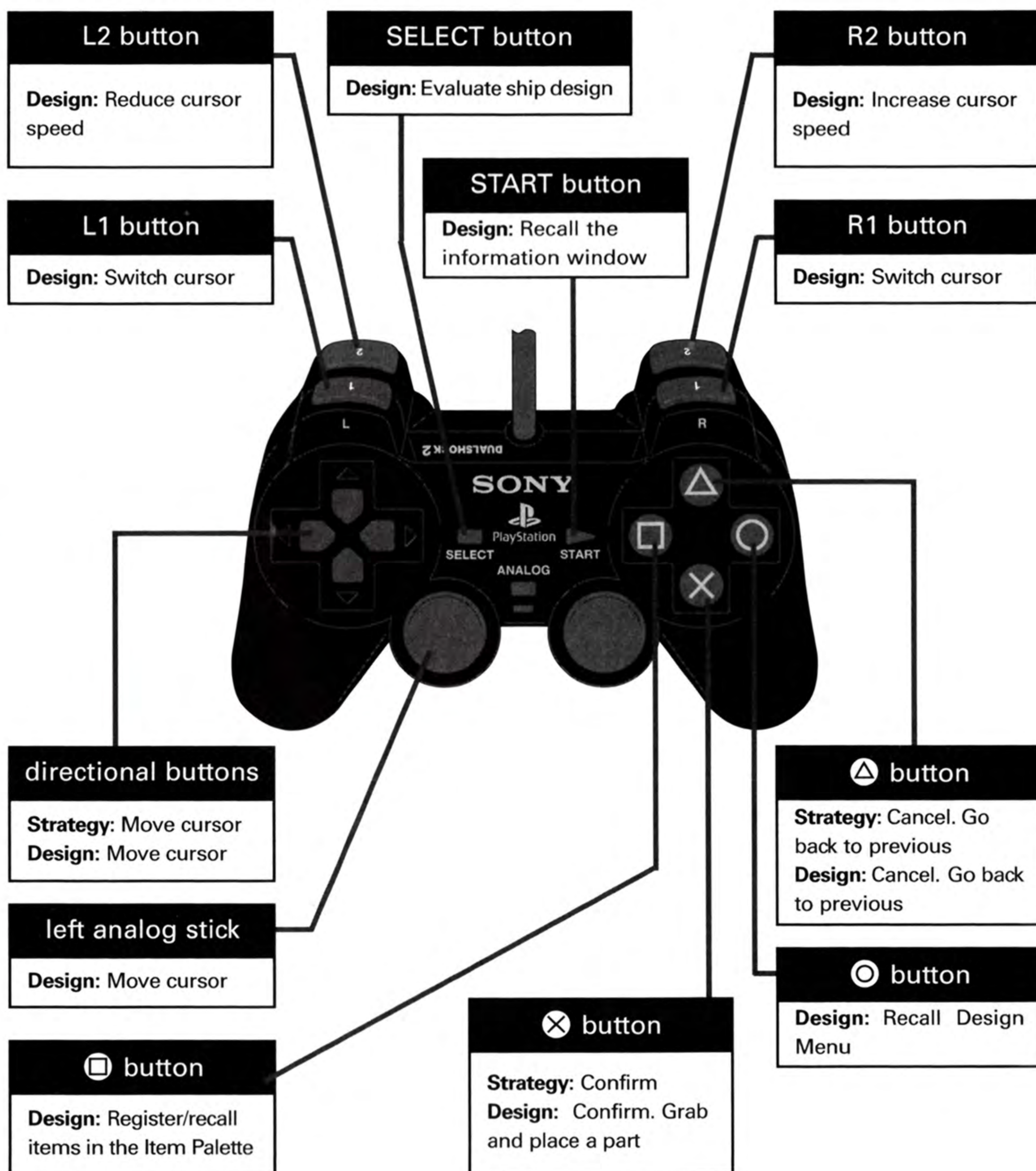
With its Mission Command in ruins, Navishia's frontline had crumbled. Having no central base of operations, the various ships of the Navishia Navy were left with no sense of direction in the ensuing war.

However, one ship set out alone on an impossible quest for redemption....

Game Objective & Starting The Game

Strategy Phase/Design Mode Controls

DUALSHOCK®2 analog controller

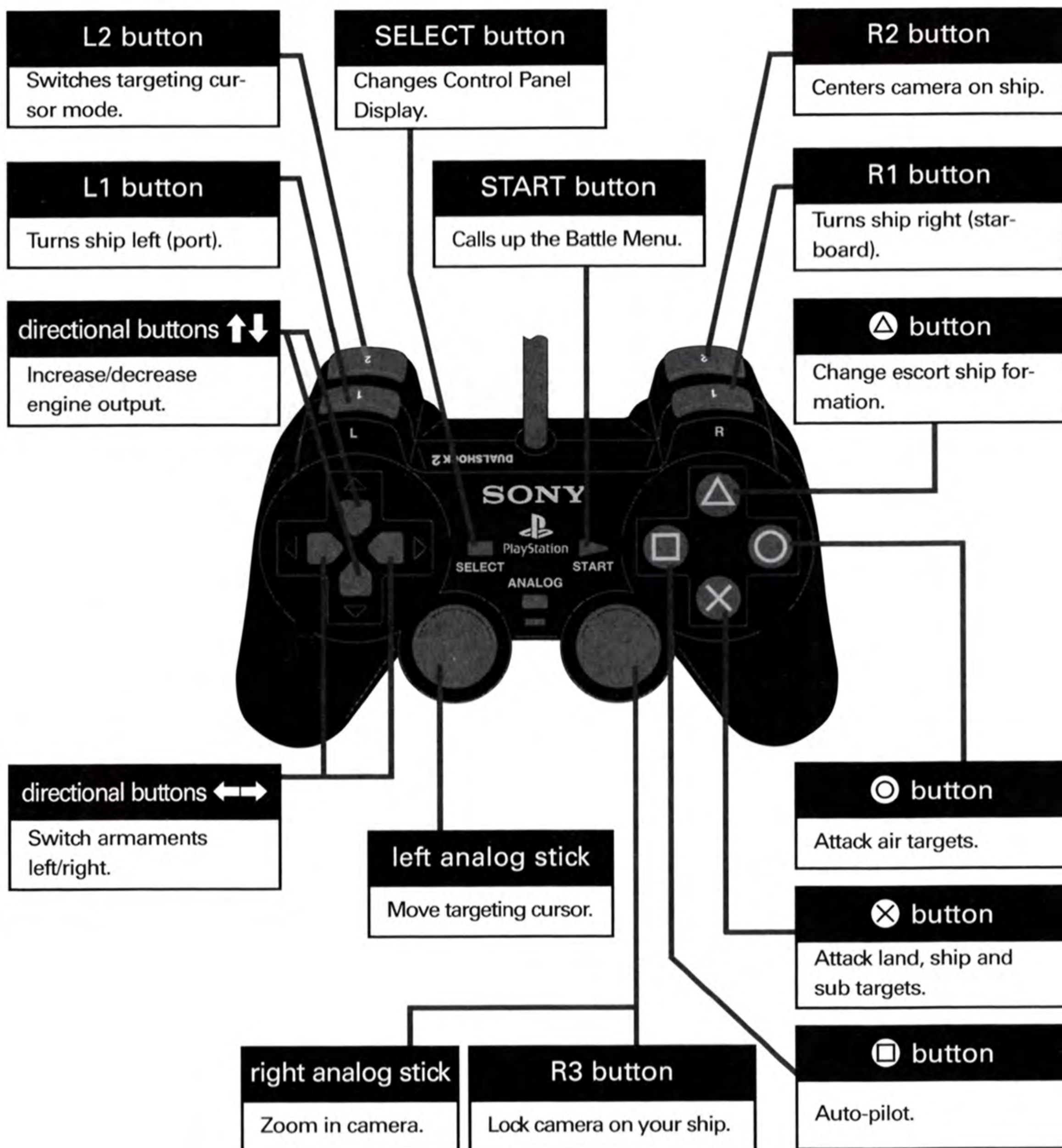


*Insert a DUALSHOCK®2 analog controller or DUALSHOCK® analog controller into controller port 1.

"Naval Ops: Commander" is a naval warship action game that takes place in a parallel world. You must design and create your own warships and then send them into battle to defeat the evil Virshian Empire.

Battle Phase Controls

DUALSHOCK®2 analog controller



*This game requires a DUALSHOCK®2 analog controller or a DUALSHOCK® analog controller to play. *This game automatically enters analog mode when the game starts up. The Vibration Function may be turned on and off in the Options Menu. [●P.09] This is regardless of whether the Analog display is on or not. *The R3 button function can be accessed by pressing down on the right analog stick.

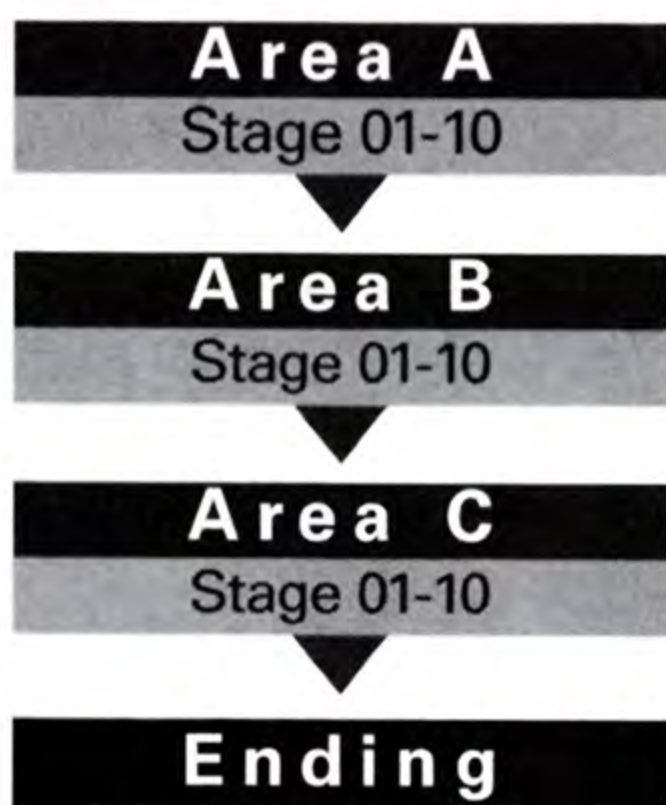
Game Objective

You assume the role of a warship captain in the Navishian Navy. You must design and deploy your own ships to stop the evil nation of Virshia and their superships from taking over the world. Accomplishing mission objectives gives you money that can be used to build even stronger ships to fight against the increasingly tougher enemies you will encounter.



AREAS AND STAGES

Following the orders relayed from Navishia through your second in command and operator, you must clear the stages in order and proceed through each area. Each area is made of 10 stages (Battle Phase) and may contain special bonus stages depending on your progress through the story. Clearing a stage opens the next stage, and the latter stages of an area may contain superships, the giant Virshia warships, lying in wait for you. Clearing an area opens the next area and its stages for you. Once you clear all of the areas, the game is complete.



Game Flow

One stage is made up of three different phases: Strategy Phase, Battle Phase and Results. You prepare for battle in the Strategy Phase and send your ship to battle the enemy and carry out objectives in the Battle Phase.

STRATEGY PHASE (DOCK) [P.10]

Here you can purchase parts for your ship and use them to design and build your ships. You can also purchase prebuilt ships (complete ships ready to use) or even aircraft for your ship. Funds may be used to research new parts and armaments. Be sure to equip your ship properly for each mission. Games can be saved and loaded only in the Strategy Phase.



BATTLE PHASE [P.26]

This is where you send your ship into battle to complete your objectives. An operation is successful if you complete your objectives and then safely "Return" to the base. If your ship is sunk, or you retreat and cannot accomplish your objective, then the mission will fail and you must retry it.



RESULTS [P.38]

The results of each mission are displayed in the Results screen. If you succeed in your mission, you will advance to the next stage. If you fail, you will have to replay the mission. You can receive funds based on your performance. These funds may be used to power up your ship in the Strategy Phase.



Starting The Game

STARTING A GAME

Follow these steps to start a new game.

1. Preparation

Insert a memory card (8MB) (for PlayStation®2) in MEMORY CARD slot 1 and turn on the power. At least 1,316KB of free space is required to save a game.

2. Insert the disc

Insert the game disc and the opening movie will be displayed.

3. Title Screen

If you press the START button during the opening movie, the Title Screen will be displayed.

4. Press the START button

At the Title Screen, press the START button to go to the Start Menu.

START MENU

The Start Menu contains the following selections.

Continue [P.08]

Load a previously saved game.

New Game [P.08]

Start a new game from the beginning.

Survival [P.08]

See how far you can take a single ship without powering it up in the Strategy Phase. You must clear Area A within the main game to unlock the Survival mode.

Tutorial [P.09]

Learn how to control your ship.

Options [P.09]

Set the game options such as volume and vibration.



*Press the [□] button to view trailers of other KOEI games. You may press the START button at any time during these trailers to return to the Start Menu.

STARTING A NEW GAME

Select “New Game” from the Start Menu. When you first start a game, you will be taken immediately to the Battle Phase. [P.26] You play as the captain of a small fleet that has just lost its Mission Command en route to a friendly base. Following the directions of your commander, you must lead your ship east to safety. If this is your first time playing the game, you should probably play through the Tutorial [P.09] to learn how to control your ship before you start.

1. Select a difficulty level

Before you play, you must select either Normal or Hard difficulty level.

2. Select your ship type

Clearing the first stage will take you to the ship registration screen. First, you must select your ship type. Using the directional buttons, select a type and press the ⊗ button. There are four ship types to choose from: Japanese, American, British and German. Each type has its own strengths and weaknesses, and some are better than others in regards to specific ships.

SHIP MANUFACTURING CAPABILITIES AND AIRCRAFT ABILITIES

Weapon Types	Ability						Aircraft Ability
	Destroyer	Cruiser	Battleship	Carrier	Battlecarrier	Aircraft	
Japanese	AVERAGE	GOOD	GOOD	AVERAGE	AVERAGE	AVERAGE	AVERAGE
American	AVERAGE	AVERAGE	AVERAGE	GOOD	POOR	GOOD	GOOD
British	GOOD	POOR	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
German	AVERAGE	AVERAGE	POOR	POOR	POOR	POOR	POOR

3. Naming your fleet

Next, you must enter a name for your fleet.

Directional buttons: Move cursor

⊗ button: Enter character

□ button: Delete character

△ button: Cancel

START button: End

After entering a fleet name, select “Finish” or press the START button and then end with the ⊗ button.



LOADING A SAVED GAME

Select “Continue” from the Start Menu to load saved data. Select the unit that you wish to load and press the ⊗ button.

SURVIVAL

This mode challenges you to clear as many stages with the same ship while trying to sink as many enemy ships as possible. Once you clear Area A of the main game, the Survival mode will be unlocked for you to play. You will be able to play as far as you have cleared within the main game. Choose the unit data, ship and escort ships you wish to use and you will need to complete each



stage's objectives starting from Stage 01. Clearing a stage will not take you back to the Strategy Phase, but rather directly to the next stage's Battle Phase, meaning you will be unable to recover ammo or repair damage. Items and ship parts obtained in the Survival mode can be used in the main game. Take your favorite ship into battle and give the Survival Mode a try!

TUTORIAL

The Tutorial mode can give you an idea of how to control your ship, battle systems and viewing the game screen within the Battle Phase. [P.26]

The Tutorial Menu is split into 9 different sections. Selecting the first section, "Controlling your ship," and playing through it, allows you to view each of the sections in order. You are also able to start from any section you choose.

Returning to the Tutorial Menu

By pressing the START button, you will be asked if you wish to proceed to the next section. Press the Δ button to return to the Tutorial Menu.

Exiting the Tutorial

Select "Exit" from the Tutorial Menu and press the $\otimes$ button to return to the Start Menu.



OPTIONS

Set the game settings.

Each setting can be adjusted with the left and right directional buttons and confirmed by pressing the $\otimes$ button.

Press the $\odot$ button to return all options to their default settings. Press the Δ button to return to the Start Menu.



Music	Adjust the music volume.
Effects	Adjust the sound effect volume.
Voice	Adjust the voice volume.
Sound	Select Stereo or Mono sound.
Vibration	Turn the vibration function on or off.
Screen Adjust	Adjust the screen.

An even greater challenge awaits the second time around!

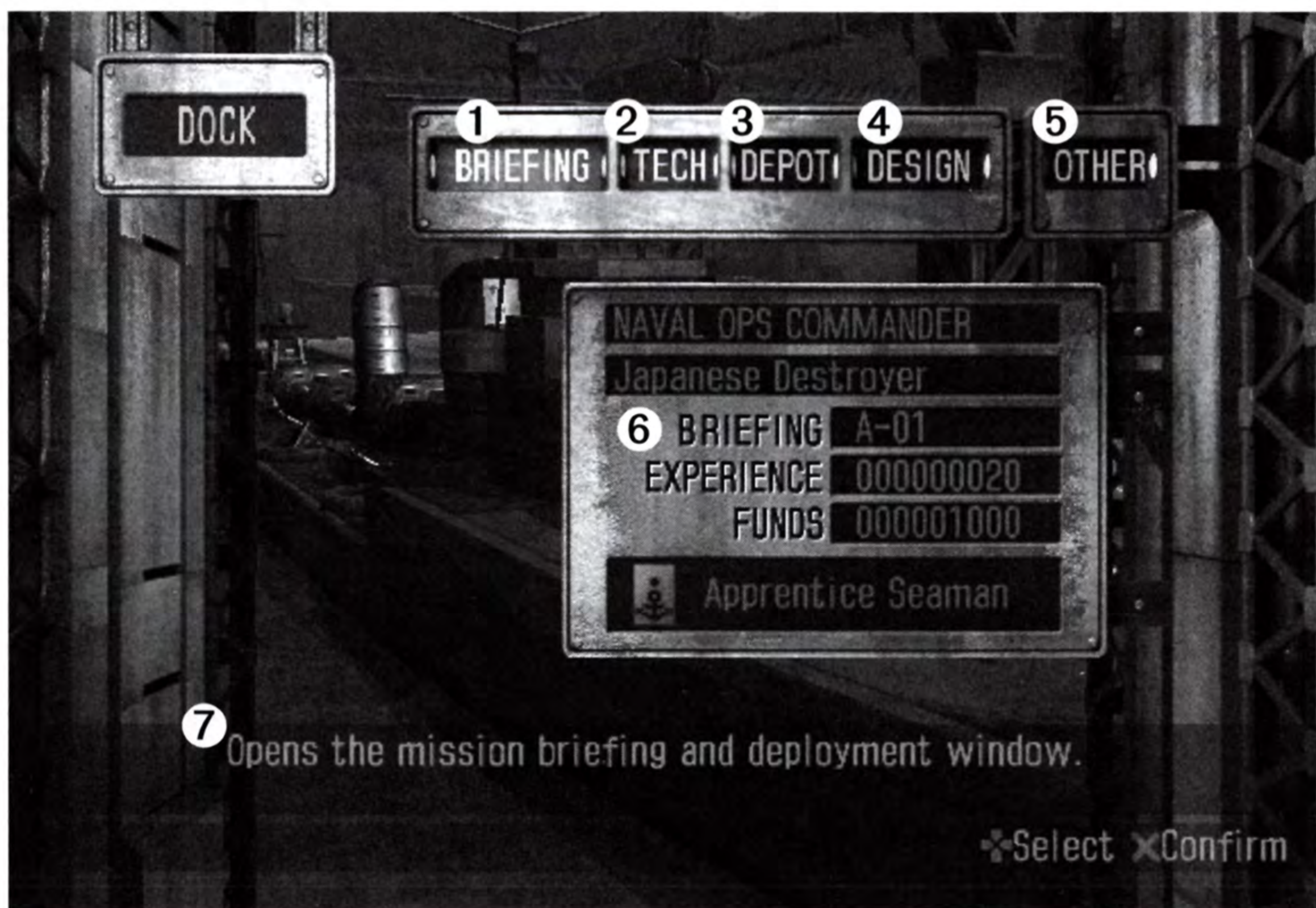
Reaching the game's ending allows you to play the game through a second time. Although the stage maps and objectives will remain the same, the enemies that appear will be stronger and new items will be available. You can power up your ship even more with these new items.

Strategy Phase

- Preparing for battle -

The Strategy Phase (Dock) Screen

This section will give you a simple explanation of the Strategy Phase and the commands available to you. For more detailed explanations of each command, please refer to the appropriate page.



1. BRIEFING [P.12]

Confirm the current stage's objectives and deploy your ship for battle. There are a variety of mission objectives, such as "Sink the enemy ship" or "Escort the allied fleet," depending on the stage.

2. TECH [P.13]

Investing in each technology raises your Tech Levels, enabling new armaments and parts to be purchased for designing your ship. As your Tech level increases, so will the cost to research the next level.



Each stage begins with the Strategy Phase. Here, you will be given the mission objective. Design your ship based on your objectives, prepare for battle and then head out to the battle sector.

3. DEPOT [P.14]

Buy and sell the parts necessary for your ship. You can also buy and sell prebuilt ships, escort ships and aircraft here.

4. DESIGN [P.16]

Design and scrap ships. You can also check the status and evaluation of your current ships.

5. OTHER [P.11]

Save and load game data. You can also check the Log (cleared missions, items obtained, etc.) and set the game options with this command.

6. UNIT INFORMATION WINDOW

Shows the info of your current unit. From the top, you can check the Unit Name, Active Ship Name, Current Area & Stage, Experience points, Funds and Rank.

7. MESSAGE WINDOW

Offers a brief explanation of the currently selected command.

Other

Here you can save and load game data. Also, you can check the Log and adjust the game options.

Load

Loads saved game data. Any data from the current game will be lost unless saved first. Be sure to save any game in progress before loading a new game.

Save

Saves current game data. You can save up to 5 games on one memory card (8MB) (for PlayStation®2). At least 1,316KB of free space is required to save a game.

Battle Log

The Battle Log lets you check the number of enemy ships sunk and the objectives of previous missions. You can also view any ship parts collected up until the present.

- | | |
|------------------|--|
| <u>Kills</u> | :Total number of enemy ships sunk. |
| <u>Stages</u> | :A record of mission objectives, ranks and superships sunk for each stage cleared. |
| <u>Equipment</u> | :A list of parts you have collected so far. |

Options

Set the game options. The settings here are the same as when choosing Options from the Start Menu. [P.09]

Go To Title

Quits the current game and returns you to the Title Screen. Any game data not saved will be lost, so be sure to save before quitting.

Briefing

After selecting an area and a stage, press the ⊗ button to bring up the mission objectives for that stage. You can play the current stage or any stage and/or area already cleared. The Briefing Screen is where you receive the current mission objective from the Operator. The time and a map of the sector are also shown on this screen. While receiving orders, relevant points and valuable advice will be displayed on the map. Be sure to check all the details of a stage before heading out to battle.

SELECT SHIP



DEPLOY



TO BATTLE

BRIEFING SCREEN

Stage Number

This shows the current area and stage number. Using the directional buttons, you can select a stage and area, pressing the ⊗ button to confirm. You can switch between area and stage with the up and down directional buttons.

Mission Codename & Objective

Message Display

The Operator will relay the mission objective to you here in text as well as voice.

△ button: Back

⊗ button: Confirmation

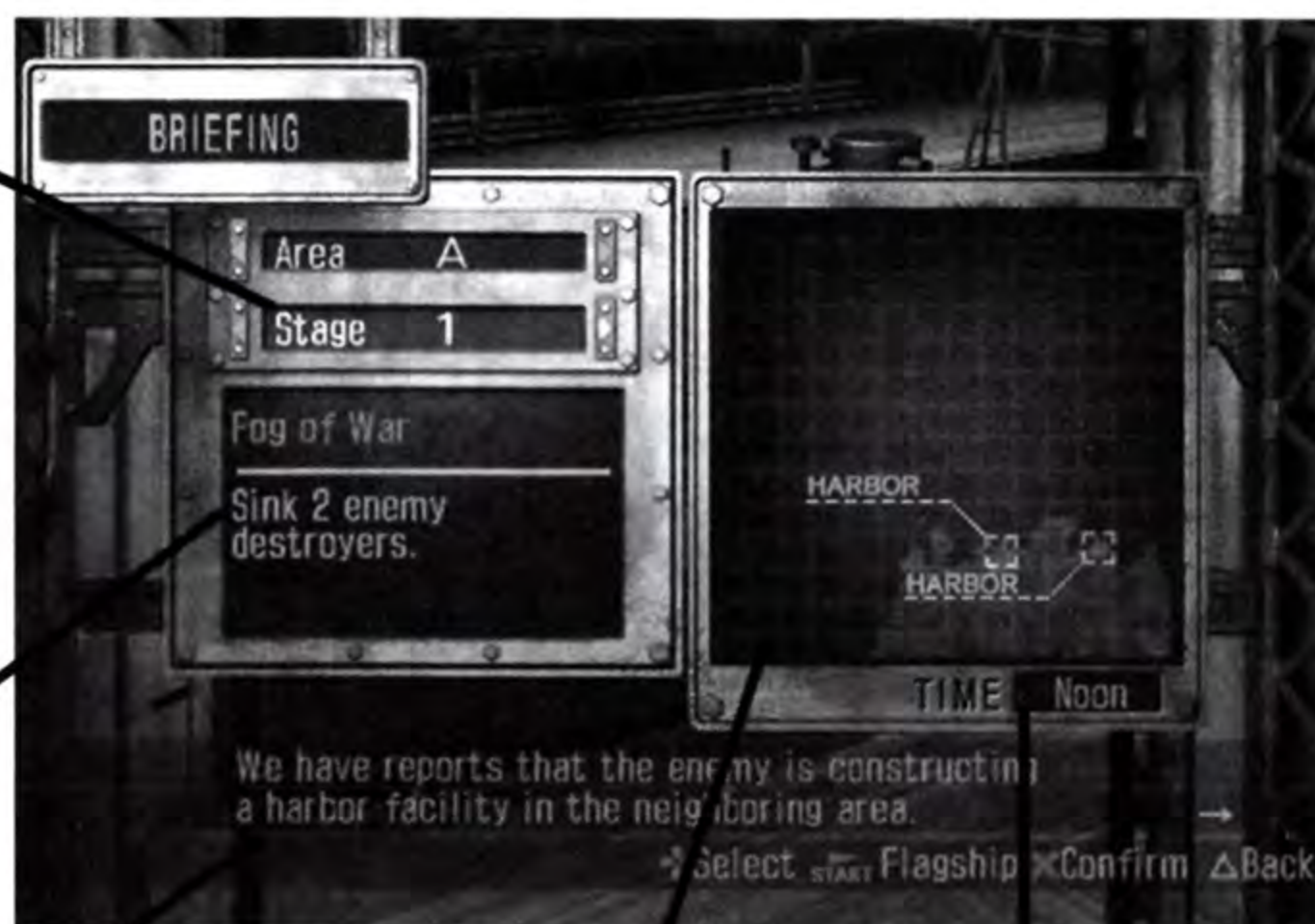
START button: Skip

Sector Map

Per the comments in the briefing, important points, targets and routes of deployment will be displayed here.

Time

Missions may take place in the Morning, Noon, Evening or Night. Your visual range may be affected by the time of day.



Tech

As your Tech level increases, you will be able to produce more items for your ship, choose from even more types of prebuilt ships and even raise the abilities of your parts.

The higher your Tech Level, the higher the required investment to raise the level again.



TECHNOLOGY LEVELS

There are 5 different Tech categories that can be upgraded from Level 0-30. As each level increases, additional parts and items related to that category can be produced.

■ Aircraft

This determines the abilities of your aircraft. Increasing this level allows you to purchase and deploy even better aircraft.

■ Engine

This is related to ship engine technology. Increasing this level allows for the production of more high-performance boilers and turbines.

■ Metallurgy

The metals used to create a ship. Increasing this level allows you to create more kinds of ships and hulls, as well as prebuilt ships. It is also related to your ability to create new armaments. Improving your metallurgy allows for lighter armor hull-plating despite offering the same amount of protection.

■ Weapons

This is ship weapons technology. Increasing this level can give you better armament systems.

■ Electronics

This covers your ship's electronics systems. Increasing this level gives you better auxiliary systems such as radar and sonar. It also has an effect on factors like hull strength and bridge control ability.

INVESTING IN TECHNOLOGY

Use the up and down directional buttons to select a technology to develop and use the left and right directional buttons to set the level of investment. Press the ⊗ button to confirm the investment. You cannot invest more funds than you currently possess.

If a new part can be produced as a result of your investment, it will be displayed in a window.



Effective Technology Investment

At the start of a game, your armaments are not very powerful. You should try to raise your Tech Levels as soon as possible to power up your ship. Improving your Metallurgy Level from the beginning of the game is a smart strategy. As your Metallurgy Level rises, you will be able to select from more prebuilt ships. The parts and armaments on these prebuilt ships make them an effective way to increase your overall strength. Also, increasing your Electronics Level improves hull strength and bridge control ability, making it a very important part of ship improvement. If your ship is not improving midway through the game, be sure to check your Electronics Tech Level. Additionally, if you want to strengthen an aircraft carrier, be sure to watch your Aircraft Tech Level.

In the game, there are special parts that cannot be purchased in the Depot. These parts may be obtained by collecting the crates that sometimes appear after sinking an enemy ship. (Item Containers ➤ P.35)

Depot

Here you can buy and sell various parts, aircraft, prebuilt and escort ships. Prices depend on the item and its ability. By increasing your Tech Levels [➤ P.13], the number of parts available for purchase will increase. You can also sell unnecessary parts for extra funds (parts will be sold for half of their original purchase price).

Purchased parts can be installed on a ship in Design Mode. [➤ P.16]

PURCHASING PARTS

1. Choosing a Category

You may choose to buy parts from the following categories: Armaments, Equipment, auxiliary system, engines, hull, aircraft, prebuilt and escort ships. [➤ P.19]



2. Select a Parts Category and Part

After selecting a category, you may view the list of parts available. When purchasing guns, you can select their caliber. Press the button in the item select screen to call up the Sort command, which allows you to choose the parts compatible with each ship type.



You can also confirm which ship types **P.23** are able to use a particular part by looking at the bottom of the parts window.



3. Review Part Specifications

After choosing a part, press the button to call up a window containing detailed information on that particular part.



4. Determine the Quantity

After checking the information on a part, press the button to purchase the part. Then you will need to use the left and right directional buttons to select the number you wish to purchase. Press the button again to confirm your purchase.

For parts that you already have in inventory, pressing the left directional button will cause the quantity number to turn blue. Use the left and right directional buttons to adjust the quantity as necessary, pressing the button will sell the selected number of that part.



Parts Can Also Be Bought and Sold in Design Mode

You may buy and sell ship parts with the Other command in the Design mode. **P.22** If you need a particular part while designing your ship, you can purchase it on the spot rather than having to return to the Dock. Also, for parts that are already placed, you can use the Place **P.18** command to easily exchange parts. However, hulls, prebuilt ships and escort ships cannot be purchased in the Design mode.

Design

There are 5 main commands for the Design mode.

Regular [P.17]

Design a new ship. You can also redesign a deployed ship. You may have up to 8 different ships at once.

Automatic [P.22]

The computer will automatically design a ship based on parameters you set in advance. Automatic Design does not allow you to redesign the ship.

Status [P.23]

Allows you to check the capabilities of your designed ship.

Tutorial [P.23]

Explains the various design commands.

Scrap [P.23]

Lets you scrap a ship and reuse the parts for the design of other ships.

SHIP DESIGN BASICS

There are some basic rules to keep in mind while designing your ship.

Necessary Parts

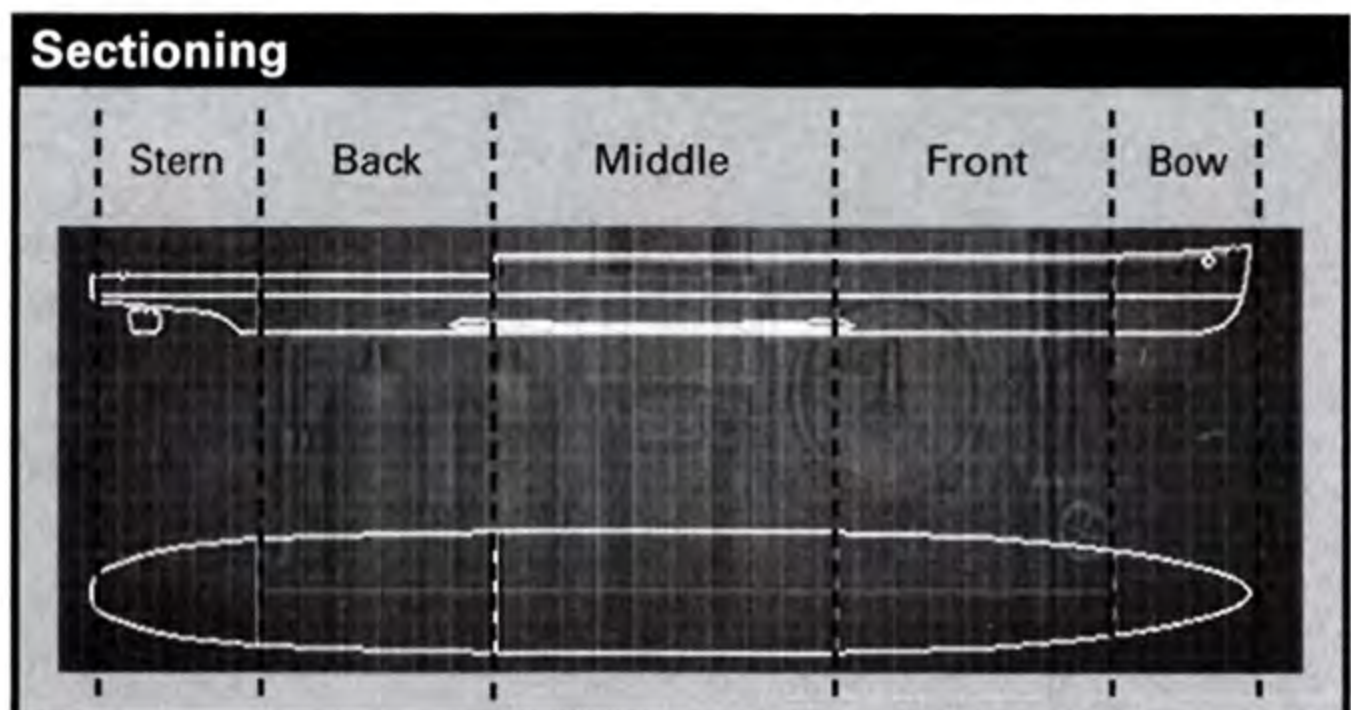
There are some parts that are absolutely necessary for any ship. While there are some exceptions, these include: a hull, boiler, turbine, smokestack, fwd bridge, sonar and radar. Carriers and battlecarriers require an elevator in addition to the above.

Total Weight and Number of Parts

While designing your ship, you must keep its total weight in mind. The maximum weight a ship can handle depends on its hull. If it is over its maximum weight, you will be unable to place any more items or deploy the ship. Also, increasing a ship's weight decreases its speed. A ship's weight not only depends on parts, but also factors such as engine placement [P.19] or defensive hull-plating. [P.21] Finally, the maximum number of parts any ship can equip is 99.

Sectioning

Each ship type has specific areas that are able to equip parts. Space is limited, so be sure to place your parts effectively.



EQUIPMENT/ARMAMENT PLACEMENT

Equipment/ Armaments	Available ships to equip					Available sections to equip				
	Destroyer	Cruiser	Battleship	Carrier	Battlecarrier	Stern	Back	Middle	Front	Bow
Fwd Bridge	✓	✓	✓	✓	✓		✓	✓	✓	
Aft Bridge	✓	✓	✓		✓		✓	✓		
Launcher		✓	✓				✓	✓		
Elevator				✓	✓		✓	✓	✓	
Smokestack	✓	✓	✓		✓		✓	✓		
Searchlight	✓	✓	✓	✓	✓	✓		✓	✓	
Auxiliary systems	✓	✓	✓	✓	✓	—	—	—	—	—
Guns	✓	✓	✓	✓	✓		✓	✓	✓	
Machine guns	✓	✓	✓	✓	✓		✓	✓	✓	
Torpedoes	✓	✓					✓	✓		
Depth Charges	✓	✓				✓	✓	✓		

REGULAR DESIGN

Here you can completely design or redesign a ship. To create a new ship, select "UNREGISTERED" from the Select Ship screen. You must have a hull in inventory in order to create a new ship.

Regular Design Screen

Selected Part

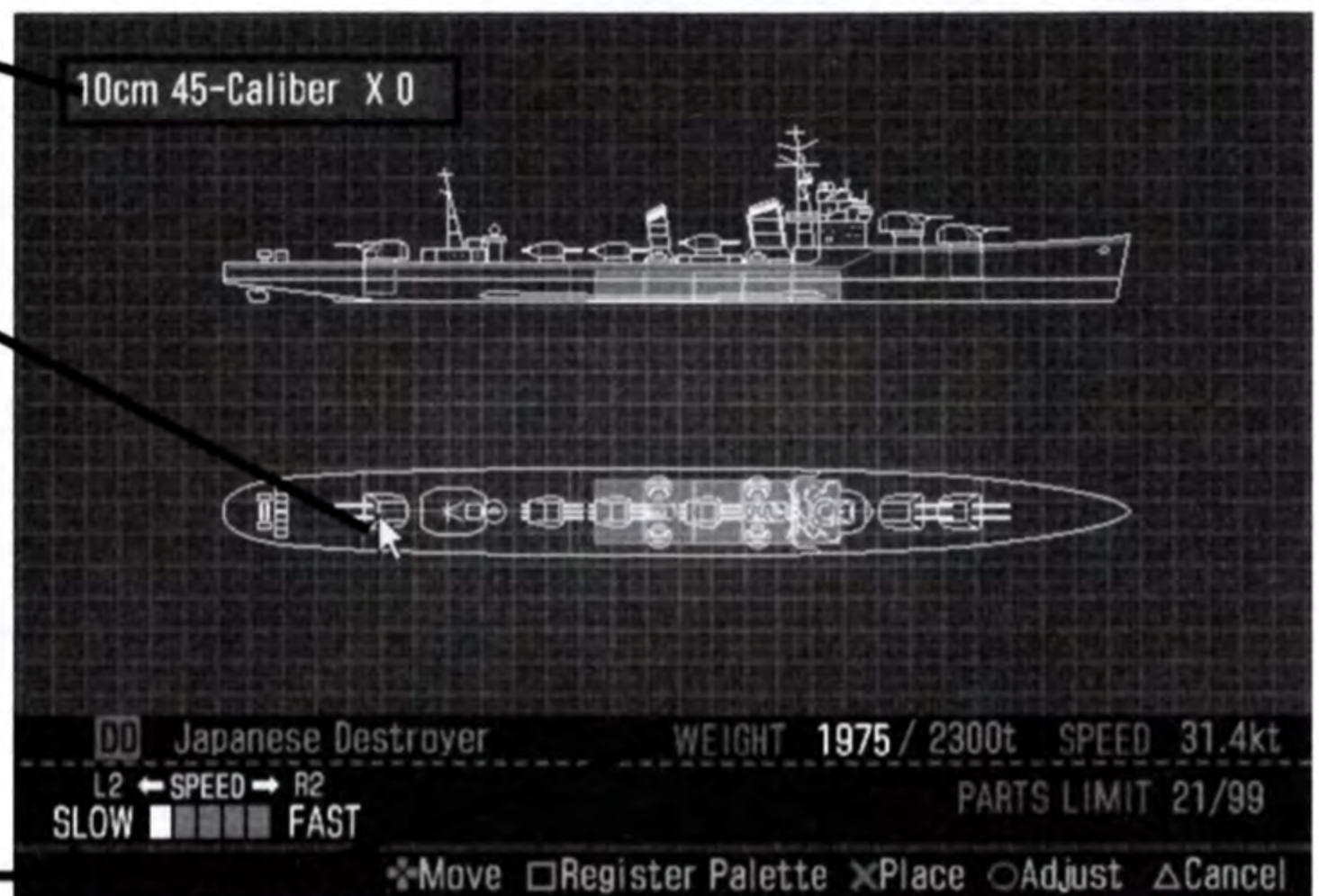
The part currently selected by the cursor and the part quantity in inventory are displayed here.

The Cursor

The cursor can select and move parts. The cursor will appear white when it is possible to place a part. It will be red when it is not possible to place a part. The L1 and R1 buttons can change the cursor to an Eraser, which allows you to delete parts from the ship, or a Pen, which can duplicate the chosen part.

Information Display

The ship's weight, speed and number of installed parts are shown here.



With a part selected, press the ⊗ button. ⊗ button

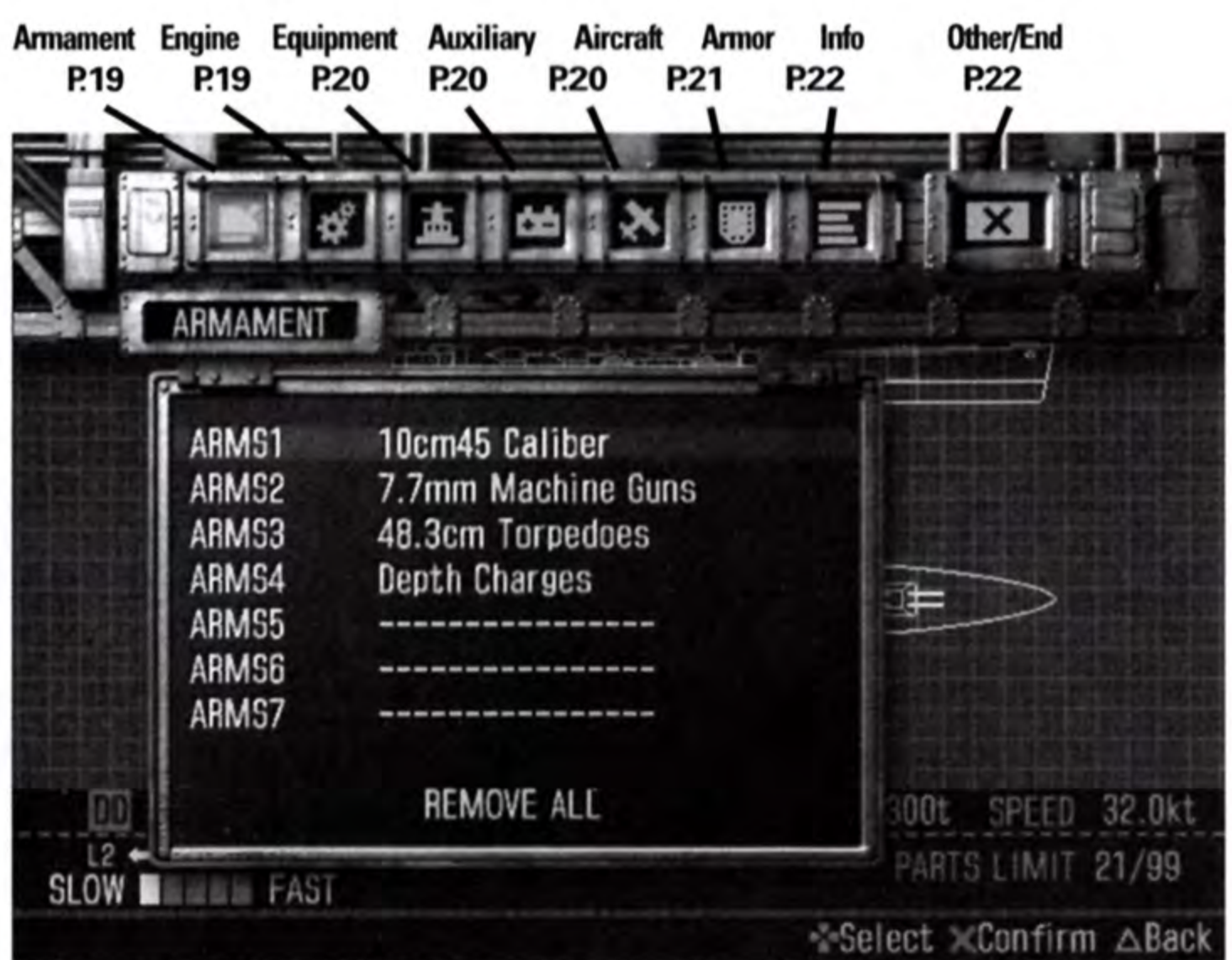
Item Adjustment Window



You may adjust the direction and height of some parts. Use the left and right directional buttons to adjust direction and the up and down directional buttons to adjust height.

Design Menu

These icons let you select parts to place on a ship or purchase parts that you need. Use the left and right directional buttons to select a window. The icons are listed from left to right as follows.



■ Regular Design Controls

⊗ button	Grab, place, remove and copy parts.
⊙ button	Call up the Parts Palette. Press the ⊙ button while grabbing a part to call up the adjustment window (in which you can adjust height or direction).
▣ button	Record parts to the palette; call up a part from the palette. Press the ▣ button while grabbing a part to record the part to the palette. Even if you perform another action, you can quickly recall the registered part by pressing the ▣ button.
L1 / R1 button	Switch cursor. Normal: Place and/or move a part. Eraser: Delete the selected part. Pen: Make a copy of the selected part.
L2 / R2 button	Adjust cursor speed. Useful for precise part movement.
directional buttons	Move cursor. Adjust part height and direction.
left analog stick	Move cursor.
SELECT button	Calls up the Evaluation Window.
START button	Finish design.

■ Parts- Place/Exchange/Remove

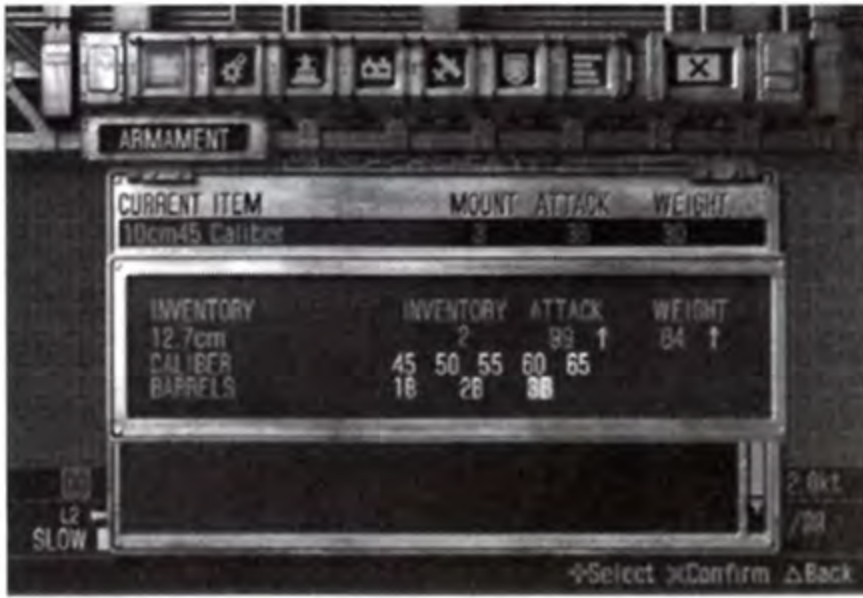
For each design command, select a line (-----) and press the ⊗ button to bring up a list of parts for that position. Press the ⊗ button on the desired part to select that part.

Depending on the part, the following commands may appear when selecting an already equipped part.

Place: Copy the current part. Useful for adding more placements of the same part.

Exchange: Bring up a list of compatible parts that can replace the currently selected part. A very helpful function, this command will automatically take you to the Depot to purchase items if you do not have any in inventory.

Remove: This command removes all placements of the selected part.



■ Armaments

Select an armament. A single ship can equip up to 7 different armaments. Adding multiple placements for a single armament increases the number of shots that can be fired simultaneously and also increases the ammo reserve. Armaments that support extra barrels will allow you to select the number of barrels. However, your ship will become heavier as you increase the number of placements and barrels. Also, the height or direction/facing of some armaments can be adjusted. [P.16] (Equipment/Armament Placement)

Armaments are broken down into the following main categories:

Guns

Large cannons for naval warship use. They offer both long range and high power. Guns are classified as turret-based "Guns" or mounted "High-Angle Guns," but both types have the same range and damage values.

Torpedoes

Self-propelled explosive armaments. They are tremendously effective against ships. Battleships, carriers and battlecarriers cannot equip torpedoes.

Depth Charges

Explosive charges for use against enemy submarines. Battleships, carriers, or battlecarriers cannot equip depth charges.

Machine Guns

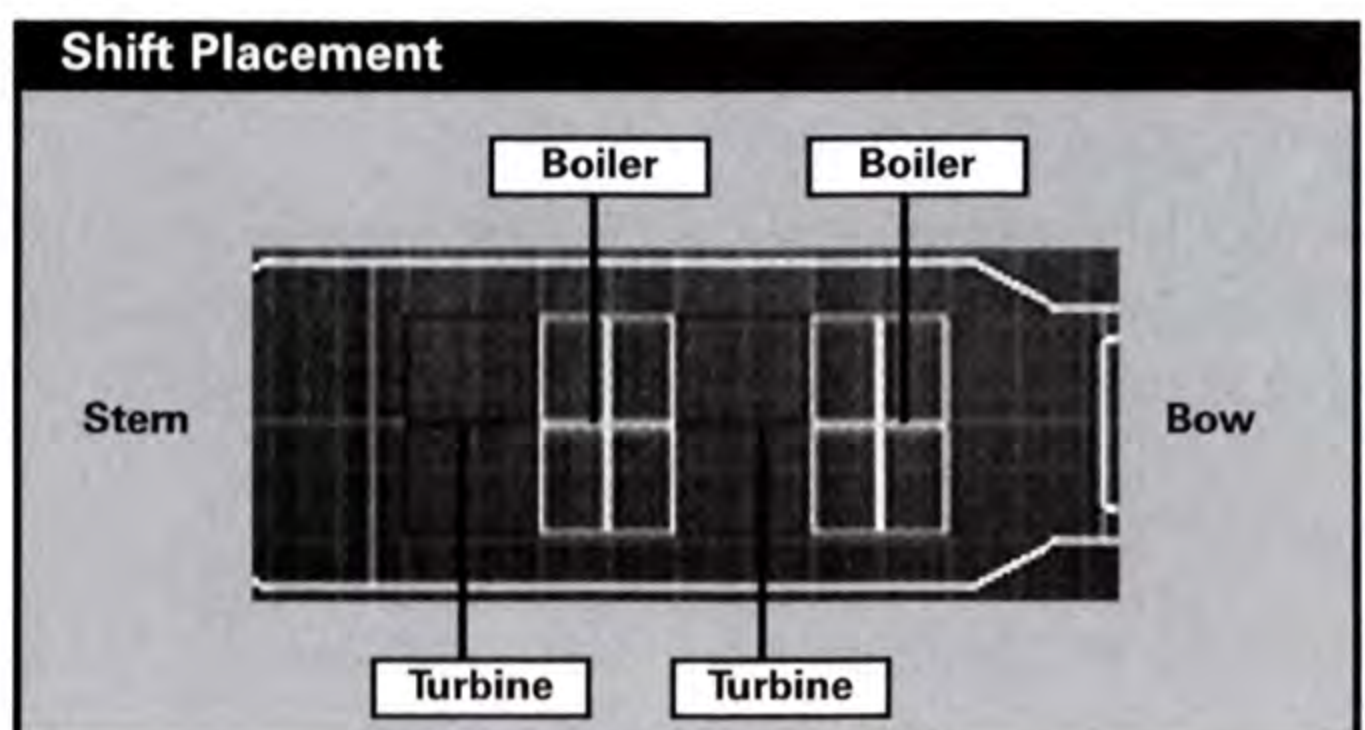
This is an anti-air and anti-surface weapon. With their short reload times and ability to shoot down aircraft, torpedoes, mines, missiles and rockets, machine guns are some of the most useful armaments on your ship.

■ Engine

Select the engines (boiler & turbine) to power your ship. Destroyers can equip up to 2 turbines, while all other ships can equip up to 4. There is no limit to the number of boilers you can equip. Your engine's performance is determined by the number and type of boilers and turbines you select. When placing boilers, you must equip a smokestack and turbines in order to purge the exhaust created. Nuclear reactors and gas turbines do not require any exhaust purging equipment.

Regular & Shift Placement

"Shift Placement" refers to placing your engines in the order of boiler/turbine/boiler/turbine starting from the bow of the ship to the stern. Placing your engines with Shift Placement will cause your ship to weigh slightly more, but will make your engines less susceptible to damage during battle, which can often slow your ship to a crawl.



■ Equipment

Select the equipment to help power up your ship. [☛ P.16] (Equipment/Armament Placement)

Fwd Bridge

The ship's command center. This affects your ship's Control and Radar/Sonar Search Range values.

Aft Bridge

Supports the functions of the Fwd Bridge. This also affects your ship's Control and Radar/Sonar Search Range values.

Smokestack

Necessary for purging the exhaust created by your boilers. These are automatically acquired when you place them. The Purge Ability must be greater than or equal to the number of boilers equipped on your ship. All ships other than carriers and battlecarriers must equip a smokestack. Smokestacks are not necessary for nuclear reactors or gas turbines, or when the equipped bridge has a Purge Ability greater than or equal to the number of boilers.

Searchlight

Lighting used to light up the area around your ship. Searchlights help increase your field of vision at night. When you place them, they are automatically acquired (don't need to be purchased). Destroyers can carry from 1 to 4 searchlights, while all other ships can carry from 2 to 8.

Launcher

A device for launching aircraft. Placing a launcher allows cruisers and battleships to also carry aircraft (watercraft only). Depending on your ship type, some bridges also have built-in launchers, meaning you do not need to equip a launcher in order to equip aircraft.

Elevator

This equipment shuttles aircraft from the storage bay to the flight deck. Adding more elevators reduces aircraft launch time. Elevators must be equipped on carriers and battlecarriers.

■ Auxiliary Systems

These parts help support the functions of your ship. You do not need to specify a location when equipping these parts. A ship can carry up to 7 auxiliary systems. Auxiliary systems fall into three categories: Offensive, Defensive and Movement. You may place whichever ones you like but you cannot place the same part more than once. Additionally, a Radar and Sonar are required for all ships.

■ Aircraft

Select aircraft to assign to your ship. Aircraft fall into the following 5 categories: interceptors (anti-air), bombers (anti-surface), fighters (anti-ship), scouts (anti-sub) and watercraft (cruisers and battleships only).

In order to equip aircraft, the following parts are required:

Ship	Necessary Part	Maximum # of aircraft
Destroyer	-	N/A
Cruiser	Launcher	Depends on ship
Battleship	Launcher	Depends on ship
Carrier/Battlecarrier	Elevator	Depends on ship

■ Defense

Select the thickness of the armor plating that covers your ship. With thick plating, your ship will have more protection, but it will also be heavier and thus slower. Raising your Metallurgy Tech Level makes plating lighter, while offering the same level of protection.

Hull-Plating

Protects the bow, left and right sides and stern of the ship. If one of these four quadrants is completely destroyed, your ship will sink.

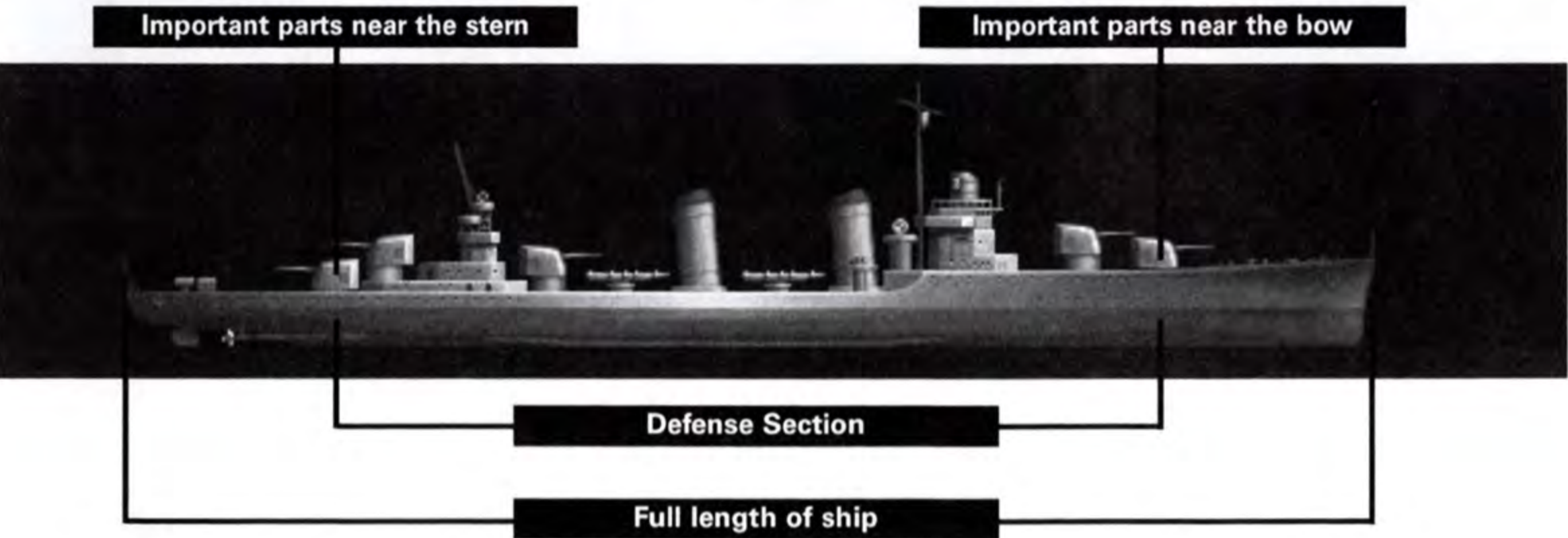
Deck-Plating

Protects the deck. If the deck is destroyed, your ship will not sink, but it will become more vulnerable to secondary damage. Also, ships such as carriers will be unable to launch aircraft until the deck is repaired.

<Defense Sectioning & Defense Evaluation>

Defense Sectioning refers to the placement of valuable equipment such as engines, smokestacks, bridges and armaments. Defense Evaluation is the ratio of the Defense Sectioning to the length of the ship and is automatically calculated. Please refer to the chart below for an explanation of the evaluations.

Defense Evaluation	Focus	Total
Defense Sectioning	Less than 54%	More than 54%
Plating	Port/Starboard plates are thick, bow/stern plates are thin	All plates are thick
Advantages	Keeps ship weight down	Improves defenses
Disadvantages	Bow/Stern have weak defenses	Speed suffers due to weight



■ Info

View the current info on your ship. Press the L1 and R1 buttons to change the information displayed.

■ Other/End

A list of the various design commands, each of which are explained below:

Confirm

Ends ship design. If basic parts such as a bridge are missing, or if the purge ability is insufficient, etc., you will be unable to finish your design.

Abort

Stops the current ship design in progress. Any changes made to the ship will be lost and the ship will return to its original status. The game returns to the Dock.

Default

Undo all changes to the current ship design. Useful for when you want to undo any changes you made and start over from the beginning.

Name

Name or rename your ship. You can change your ship's name as many times as you like.

Purchase

Purchase parts [☛ P.14] needed for your design. If you are missing a part during design, this command allows you to buy the needed part without returning to the Dock.

Status

Confirm the appearance and stats for your designed ship. [☛ P.23] **Status**

Evaluation

Receive an evaluation on your ship. You can also receive an evaluation of your ship by pressing the SELECT button while in the design screen.

Help

Learn various control tips, and advice on ship design. From part basics to effective placement, Help provides various hints and information, making it a must read for any novice player.

Using the Design Evaluation System

Use the Evaluation command or press the SELECT button, to receive an evaluation of your current ship. This system analyzes your ship. Everything from armaments, defense and speed are checked, and you are even given a score on the design as well as a list of the ship's strong and weak points. Once you finish with your ship design, be sure to use the Design Evaluation System to see how you did.

AUTOMATIC DESIGN

This mode builds a new ship for you based on a number of parameters that you set. You cannot create a ship that exceeds your current Tech Levels.

1. Select a Ship and Hull Type

First, choose the ship (cruiser, battleship, etc.) and hull that you want to use.

2. Set the Design Parameters

Next, set the parameters for the design. You can choose values for the following six parameters: range, type, secondary arms, defense, aux. offensive and aux. defensive. When you finish adjusting the parameters, select Confirm and press the ⊗ button, and your ship will be automatically built.

3. Confirm Ship Specifications and Purchase

The newly created ship will be displayed. Press the $\otimes$ button to display the ship's price. Press the $\otimes$ button again to confirm the purchase. If there is something that you don't like about the ship, you can press the $\triangle$ button to go back and alter the parameters again.

STATUS

Review the appearance and status of your ships.

Directional buttons: Select/Control Camera

$\square$ button: Camera mode/Pause Camera

$\otimes$ button: Confirm

$\triangle$ button: Back

TUTORIAL

Learn the controls for ship design while following along with the Tutorial. The Tutorial Menu is divided into nine sections. You can complete each section in order, starting with the first chapter, "Controls," or you can start the Tutorial at any chapter.

Return to the Menu Screen

Press the START button during the Tutorial to return to the Menu Screen.

Quitting the Tutorial

Select "Exit Tutorial" from the Tutorial Menu and press the $\otimes$ button.

SCRAP

This function scraps a current ship in your dock and recycles the parts. However, if you only have one ship, you will not be able to scrap it. Select the ship you wish to scrap and press the $\otimes$ button.

Ships and Design Hints

This game allows you to design five different types of ships, including Destroyers, Cruisers, Carriers, Battlecarriers, and Battleships.

● Destroyer

Your first ship. A destroyer is small and has a tight turning radius. Although capable of anti-air, anti-surface, anti-ship and anti-sub attacks, destroyers are not very durable and are not able to carry very much weight. Be sure to use the destroyer's mobility to your advantage- dart in and out to strike with a flurry of torpedoes.

● Cruiser

A well-balanced ship in both offense and defense, cruisers play an important role in all naval battles. Unlike destroyers, cruisers are capable of equipping multiple large caliber guns and missile launchers. Fine-tuning your armaments and defense on a regular basis in accordance with the mission objectives is the key to success with cruisers.

● Carrier

These massive ships use aircraft such as fighters and bombers to carry out strikes. A carrier's lack of offensive and defensive capabilities are compensated by aircraft. The key to building power-

ful carriers is to focus on deck plating and to increase your Aircraft Tech Levels.

● Battlecarrier

This special hybrid ship combines the firepower of a battleship with the aircraft launching capabilities of a carrier. If designed properly, battlecarriers can become some of the most powerful ships at sea. If you have sufficient funds, you may want to experiment with the battlecarrier.

● Battleship

The largest and most powerful type of ship, the battleship is often referred to as a "floating castle." With the destructive capabilities of large caliber guns and thick steel hulls, battleships can prove highly effective throughout the game. With plenty of difficult battles in the later stages of the game, be sure to keep your funds and Tech Levels high. However, don't forget upon successful completion of mission objectives, the use of battleships return the lowest funds, making it the most difficult ship to increase funds with.

DESIGN FLOW AND ADVICE (SAMPLE DESIGN)

Here is a brief outline of the steps involved in designing your own ship. Use the selection and placing of parts described here to create a ship of your own design.

1. Place the Engines

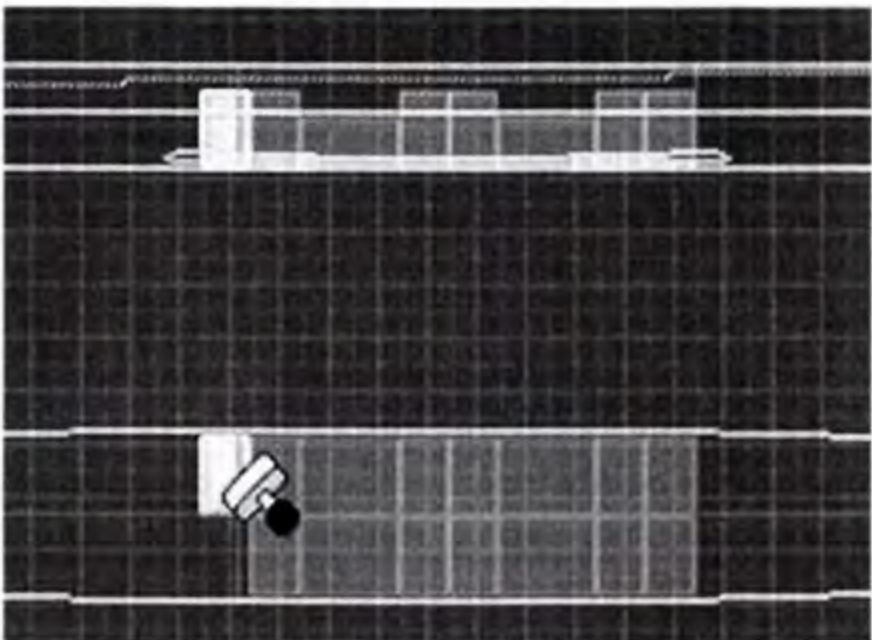
First, you need to place the engines, which are the heart of a ship. To prevent your ship from breaking down and losing speed due to engine damage, place your boilers and turbines in Shift Placement **P.19** at the center of your ship. Later, after finishing the rest of your ship, you can add even more boilers to increase speed. Be sure to install the maximum number of turbines allowed for your ship.

2. Place Your Main Equipment

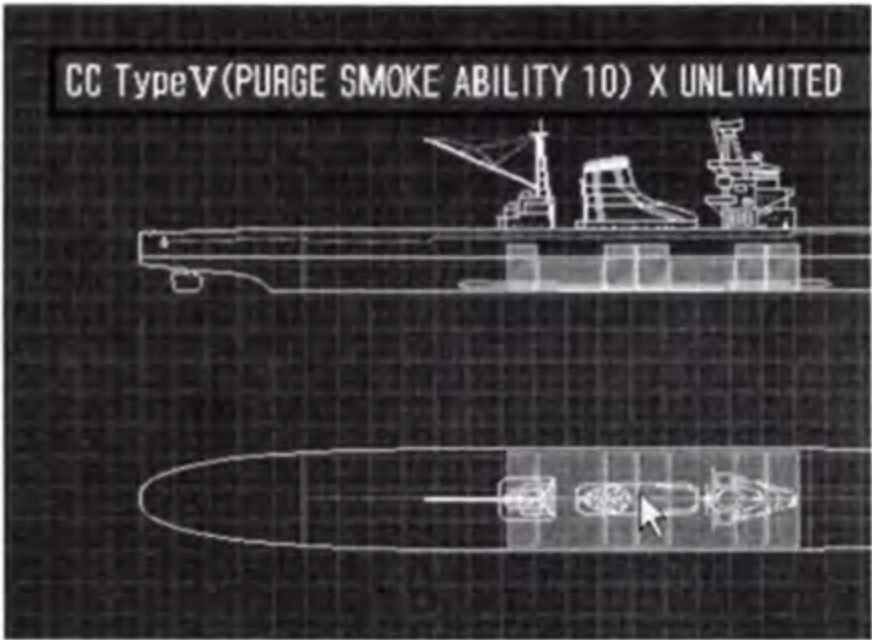
Next, place your Equipment. You will need a Fwd (Forward) Bridge, and an Aft Bridge to help improve the ship's Control. Also, place as many smokestacks as you have boilers. Place these parts in the center of the ship so they do not interfere with the placement of your armaments. Auxiliary Systems are parts that help improve and strengthen the functions of your ship. Radar and Sonar are necessary for all ships, so be sure to keep your Electronics Tech Levels up and purchase the latest systems whenever possible. Searchlights can be placed last wherever there is space for them.

3. Think of Your Defensive Requirements

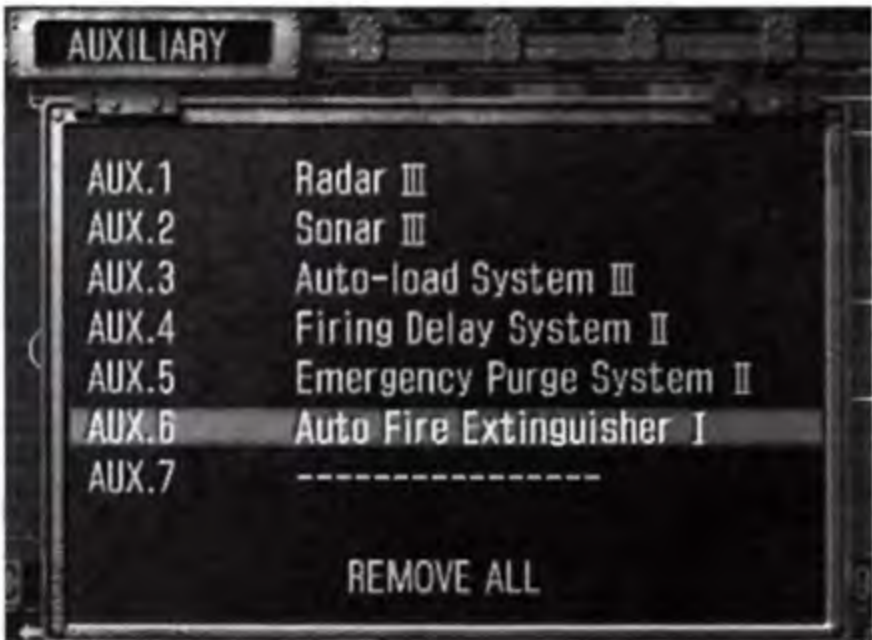
Before equipping your armaments, be sure to think about your defense **P.16**. You should focus on your Hull-plating. A good rule of thumb is to aim for a plate thickness equal to the size of the guns on your own ships. Deck-plating can be thinner, but without capable auxiliary systems, you will easily suffer secondary damage. Additionally, if carriers or battlecarriers lose their decks, then aircraft will be unable to take off and land, so be sure to use slightly thicker Deck-plating on them. If at first you select temporary plating, you will at least have an idea of how much weight you have remaining when equipping your armaments.



Place your engines in the order of boiler, turbine, starting from the bow of the ship. It does not matter if there are spaces between the engines, but you should try and conserve space.



Be sure to equip a smokestack with a Purge Ability equal to or greater than the number of boilers on your ship. You can equip more than one smokestack. Nuclear reactors do not need smokestacks.



Do not neglect your auxiliary systems. Get them out of the way first.



Properly balancing the offensive and defensive capabilities with the speed of a ship is the key to a successful design.

4. Placing Armaments

Finally, it's time to place your ship's armaments. First, let's place the main gun. The bigger the gun, the more powerful it is and longer range it has, but a heavy gun requires a longer reload time. Keeping dispersion in mind, place guns along the centerline of the ship, facing both the front and rear.

You cannot place heavy armaments directly above an engine. Try not to waste space and adjust the height of your guns to place them most effectively.

Depending on your plating, your Defense Evaluation **P.21** will be determined. Here we will opt for defense and go for just over 54% coverage, leading to Total Coverage.

Next, equip some anti-ship armaments. Place torpedoes at both the starboard and port sides, directed toward the front and rear of the ship. You can only fire torpedoes to the side of your ship, so remember that during battle. Be sure to equip some depth charges to deal with enemy submarines.

The remaining armament slots should be devoted to ship defense. You may be attacked with multiple torpedoes and missiles at the same time, so it is important to place multiple machine gun mounts and anti-air guns across your ship.

5. Balancing Total Weight and Speed

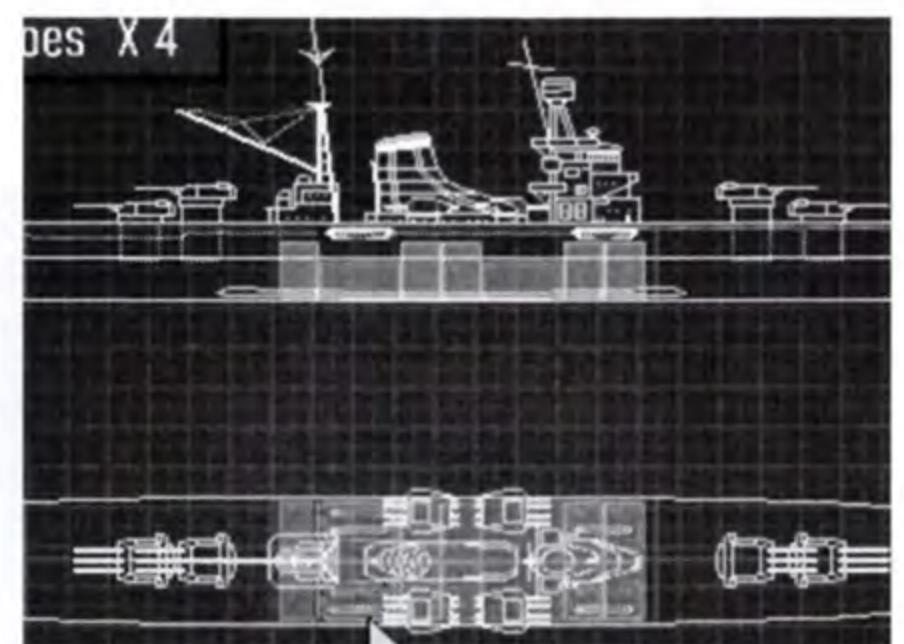
Be sure to keep in mind your total weight and top speed while equipping armaments. If you are unable to equip many armaments, you probably have armor plating that is too thick or you have too many engines. On the other hand, be careful not to put too much weight into your armaments, ignoring speed and defense. If possible, you should try and aim for a top speed of at least 30 knots with your ship fully equipped.

6. Name and Evaluate Your Ship

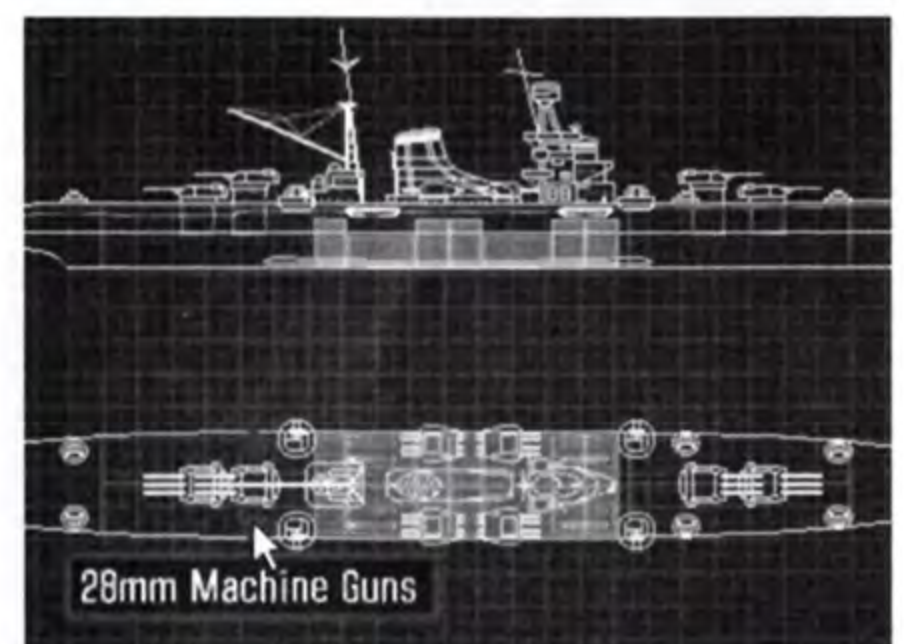
Once you name your ship, be sure to check the evaluation. **P.22** The computer will view and rate your ship in a variety of different categories. If any design flaws are found, be sure to fix them before you sail into combat.



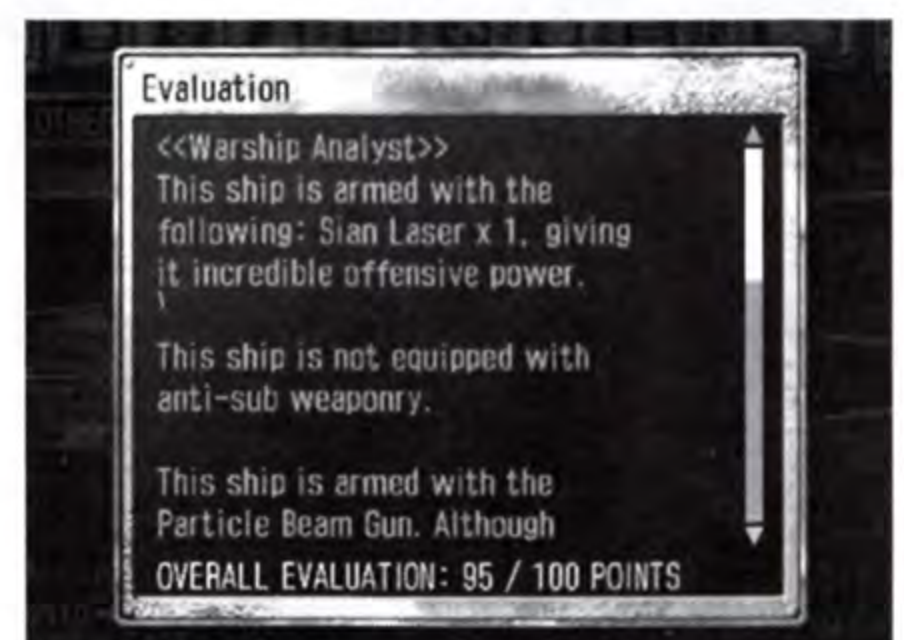
Place your armaments while adjusting the height and direction (facing) of them. This will play a factor in deciding whether your protection is Total or Focused.



Depending on the hull, you may be able to place torpedoes on the deck. Be sure to have guns facing in both directions.



Machine guns are not necessary, so they do not factor into your Defense Evaluation. Place them at the bow and stern of the ship.



Upon completion of your design, be sure to check out the Evaluation. The computer will analyze your ship based on offense, defense and speed. A well-balanced ship will be graded highly, but for some mission objectives, a lesser-rated ship may be the one best suited for the job. Keep this in mind while designing ships and experiment with what you think is best.

The Battle Phase

- Taking a ship into battle -

The Battle Phase Screen

Here is a brief explanation of the Battle Phase screen and its commands.

*Press the SELECT button to switch to a simplified version of the control panel.



1. Message Display

Mission orders and damage reports are shown here.

2. Enemy Ships

The remaining health for enemy ships will be displayed with a red life bar. Friendly ships (escorts or allied ships) will be displayed with a blue life bar.

3. Targeting Cursor

This cursor is for targeting and attacking

enemies. The Targeting Cursor has Manual and Pursuit control, and can be switched using the L2 button. The white triangle within the Targeting Cursor indicates the direction of the closest target. **P.32** When the Targeting Cursor is green, it means that the target is within range. Red means the target is out of range, and white means that the target cannot be attacked.

After designing your ship in the Strategy Phase, it's time to complete a mission. From here on, the manual will explain the general flow of the Battle Phase and how to control your ship in battle.

4. Radar & Mini-map

The Radar shows enemy units detected as well as your heading, the direction your ship is facing. The Mini-map shows the entire sector (the white dot indicates your current location).

■ RADAR SYMBOLS

WHITE DOT: Mission Objective (white)

RED DOT: Enemy Ship (red)

GREEN DOT: Allied Ship/Aircraft (green)

BLUE DOT: Enemy Submarine (blue)

YELLOW DOT: Enemy Aircraft (yellow)

5. Engine Output Bar

Displays the current engine output and ship speed. From the top, it reads 3, 2, 1, N and R. You can adjust the engine output with the up and down directional buttons. ➤ P.30

6. Armaments Panel

Shows the currently equipped armament and its remaining ammunition. Each weapon is numbered 1-7 and can be selected with the left and right directional buttons. The weapon in use will be switched to Manual mode. Press the START button to call up the Battle Menu, and then choose Armaments to set the mode for the other weapons. When a ship carries aircraft, you can move the cursor over to the airplane icon on the far right and then press the ⊗ button to launch and recall aircraft. ➤ P.31

7. Damage Indicators

Displays any damage suffered by the ship. Sections that have taken damage will gradually change from green to red. If a section meter turns completely red, then your ship will sink. ➤ P.34

*When using the simplified control

panel, your ship's damage indicators will appear in the bottom-right as the following symbols:

F: Bow L: Port R: Starboard
B: Stern D: Deck

8. Secondary Damage Warning

When your ship takes on secondary damage, the indicator light will turn on.

➤ P.34



Engine



Rudder



Flood



Fire

9. Fuel Gauge

Displays your ship's remaining fuel. If you run out of fuel, you will be unable to move any faster than idling speed. ➤ P.29



FULL

EMPTY

10. Escort Ships Panel

Shows your escort ship formation. You can change the Escort mode by going to the Battle Menu and selecting Escort.

➤ P.33, ➤ P.37

Escort Mode



Row



Arrow



Diamond



Rear

Independent Mode



Pursuit



Stop



Defend

Preparing for Battle

After the Strategy Phase, you can proceed to the Battle Phase with the Briefing command. ➤ **P.12** Before heading out on a mission, you will need to select your ship and your escorts.

SELECT A SHIP AND ESCORT SHIPS

1. Select a Ship

After confirming your objectives, choose a ship from the vessels available at the Select Ship screen. Press the ☐ button to change the firing control of your armaments. ➤ **P.30** You can only choose one ship to go into battle. After selecting your ship, you will be taken to the Deployment screen.



2. Select your Escort Ships

To select the supporting ships that will make up your battle group, choose Select Escort. You can have up to three escorts, which are numbered from 1 to 3. You are free to choose any ship you like. However, you must have the necessary Experience points in order to select them. Press the ☐ button to sort the list of available escort ships. Once you have finished selecting your escort ships, press the button to return to the Deployment screen then choose Deploy.



CHARACTERISTICS OF ESCORT SHIPS AND EXPERIENCE POINTS

You can have up to 250 escort ships in your inventory. These ships can be purchased at the Depot. ➤ **P.14** Invest in Tech Levels to increase the different kinds of escort ships available for purchase. You may also salvage escort ships in battle. Escort ships cannot be directly controlled, but you may repair them by rescuing the enemy sailors from a sinking ship. ➤ **P.34** If an escort ship is destroyed during battle, it will automatically be returned to your inventory, however you may use funds to recover it. Powerful escort ships require a higher level of Experience points and more funds in order to be recovered. Experience points are earned by clearing mission objectives.

Even if you have completed a stage's primary objective, you should try to clear the secondary objectives in order to quickly gain Experience points. Increase the attack strength of your battle group by using more Experience points to create the group. However enemy ships, gun emplacements and other threats that appear in the stage will be more powerful as well. Be sure to keep the mission objectives in mind while choosing the escort ships in your battle group.

Battle Phase Gameplay

Here is an explanation of the Battle Phase and its contents. Please refer to the referenced pages for a more detailed description of each section.

Search for Enemies and Move Your Ship ➤ P.30

Look for enemy ships using your map, radar and field of vision, and then move your ship accordingly. Controlling your ship smoothly is the first step to a successful mission.

Launch an Aircraft Unit ➤ P.31

If you have a ship that is equipped with aircraft, give the orders to launch aircraft. Once airborne, planes move and act automatically, searching for and attacking any threat. To call them back, simply give the order and all deployed aircraft will return to your ship.

Attack ➤ P.31

If you find an enemy, move to attack it. While moving in, change armaments and keep an eye on the enemy ship. Also monitor your remaining ammo and current ship damage.

Retrieve Enemy Sailors and Containers ➤ P.35

Sinking enemy ships can leave behind enemy sailors, items or parts containers. Simply move your ship over these items to collect them. Collecting enemy sailors or containers has various benefits such as restoring damage or fuel to your ship. You may even find valuable new parts for your inventory.

Complete the Mission Objective and Head Home ➤ P.35

After completing the primary mission objective, the message, "Exit Battle Sector" will appear at the upper right corner of the screen. Departing the battle sector completes the mission, and allows you to move on. If your ship is sunk, or you retreat without completing your mission, the result will be failure.

Controlling your Ship

ADJUSTING SPEED

The Engine Output Bar controls your ship's speed. Output is measured using 5 different increments: Full Ahead (3), Cruising Speed (2), Idle (1), Neutral (N) and Reverse (R). Select the best speed for conditions.

Ships require fuel in order to move. If your fuel level drops to 20%, you will not be able to go past Cruising Speed. If it reaches 0%, then you cannot go past Idling Speed. Escort ships adjust their speed automatically to match your current speed.

directional button ↑	Raise engine output by one level
directional button ↓	Lower engine output by one level



RUDDER

The ship's rudder is used for turning. Controll the rudder with the L1 and R1 buttons.

L1 button	Turn left (port)
R1 button	Turn right (starboard)

MOVING YOUR FIELD OF VISION

Use the left analog stick to move the targeting cursor and scroll your on screen field of vision. Press the R2 button to center the targeting cursor back to your ship. Also, you can zoom the camera view in and out by moving the right analog stick up and down. The R3 button (push down on the right analog stick) can lock/unlock the screen centered on your ship.

The dark areas of the screen represent the limits of your field of vision. At night, visibility significantly decreases, but equipping searchlights can help extend your field of vision. Your field of vision also depends on your auxiliary systems and ship unit formation.

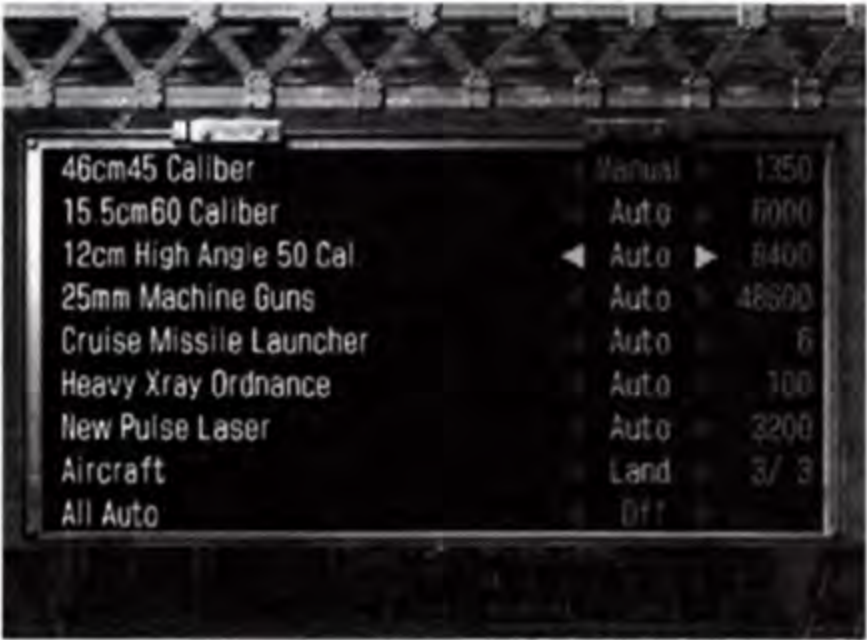
left analog stick	Scrolls the screen	right analog stick - up	Zoom in
R2 button	Centers the screen on your ship	right analog stick - down	Zoom out
R3 button	Lock/unlock the screen centered on your ship		

Offense

Attack enemy ships, planes and installations using the weapons equipped on your ship. Use the left analog stick to track enemies with the targeting cursor and then press the  button or  button to attack. Unless you have all armaments set to Auto  P.37, then the currently selected armament will be set to Manual. No matter what type of ship you have, you can equip a maximum of 7 weapons. Escort ship armaments are always set to Automatic.

ARMAMENT FIRING SETTINGS

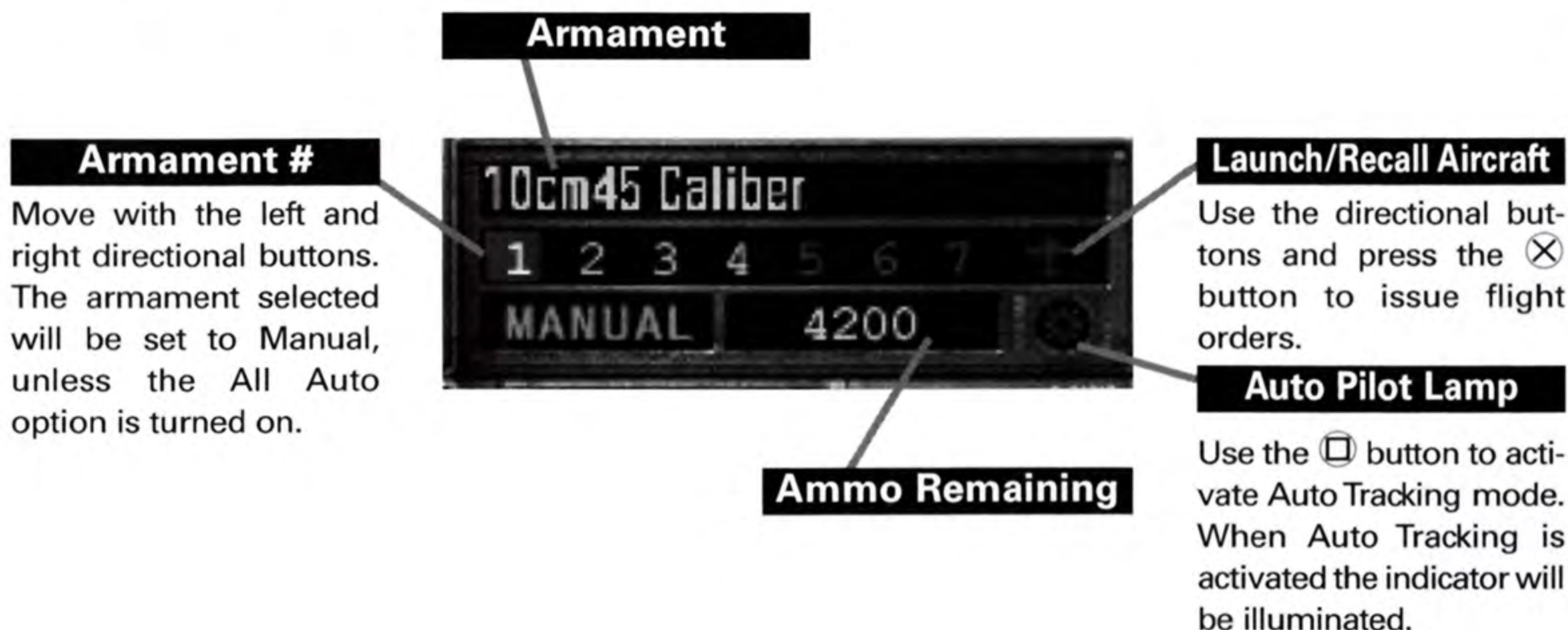
Weapons can be set to fire on either Manual or Auto control. You can control a weapon set to Manual, but only one armament can be set to Manual at a time. Armaments set to Auto will fire automatically when in range. The accuracy of automatically fired armaments depends on your ship's degree of Control. You can also set armaments to Off in order to save ammunition. To adjust the firing settings of your armaments, press the START button to bring up the Battle Menu and then select the Armaments command.  P.37 You can also set firing settings at the Select Ship screen.



SWITCHING ARMAMENTS AND CONTROLLING AIRCRAFT

Switching Armaments

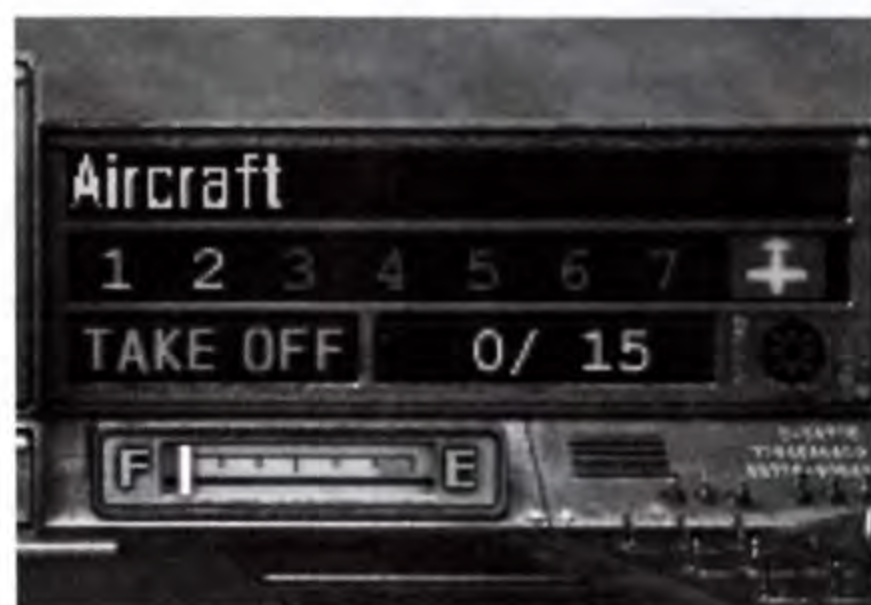
You can switch the weapons that you set to Manual using the left and right directional buttons. Be sure to check the armament you are using and the remaining ammo on the control panel.



Launching/Recalling Aircraft

If your ship is equipped with aircraft, you can order sorties. Use the directional buttons to select the aircraft icon on the far right of the armament window and press the ⊗ button to launch aircraft. To recall aircraft back to the ship, select the aircraft icon once again and press the ⊗ button. You can also use the Armaments **P.37** command in the Battle Menu to launch and recall aircraft.

There are some precautions you should follow. At night, only aircraft that are able to fly at night can be launched. If your deck is damaged, aircraft will not be able to take off or land. Since deployed aircraft are controlled automatically, you cannot select their targets or flight paths. They will return to your ship to refuel and rearm and will take off again. If you wish for the aircraft to stay on board, simply issue a recall order. Lastly, planes shot down in battle will not be recovered, even after the stage is completed. To obtain more planes, you will have to purchase them at the Depot.



FIRING MANUAL ARMAMENTS

Targeting Cursors

To aim and fire armaments that are set to Manual control, align the cursor with the desired target and press the ⊗ button (anti-land, anti-ship, anti-sub) or the ⊙ button (anti-air) to attack. The shape of the targeting cursor depends on the armament selected. The targeting cursor will also change if you run out of ammo or during reloading. The (▲) inside the targeting cursor indicates the direction of the nearest target.



[Anti-land, anti-ship, anti-sub, anti-air] Targeting Cursor is Green

The center of the cursor becomes a (+). You can attack land, ship and sub targets with the ⊗ button and air targets with the ⊙ button. However, if the selected weapon is not capable of underwater attacks, they will be ineffective against submarines.



[Anti-land, anti-ship, anti-sub] Targeting Cursor is Green

The center of the cursor is an (M). You can attack land, ship and sub targets with the ⊗ button. However, if the selected weapon is not capable of underwater attacks, they will be ineffective against submarines. You cannot attack with the ⊙ button. The color of the cursor is blue.



[Anti-air attacks] Targeting Cursor is Green

The center of the cursor is a (W). You can attack air targets with the ⊙ button. You cannot use the ⊗ button.



[Reloading] Targeting Cursor is Red

This cursor shows that the weapon is reloading and you cannot fire. You are unable to use the weapon until the circular gauge is restored.



[Out of ammo/range] Targeting Cursor is White or Red

Unable to fire because you are either out of ammo or the target is out of range for the selected armament.

Moving the Targeting Cursor

Move the Targeting Cursor with the left analog stick. The cursor can be in Manual or Pursuit Mode. Switch between these two modes using the L2 button. No matter which mode you are in, press the R2 button to center the Targeting Cursor back to your ship.



[Manual Mode] Square Outside Cursor (□)

In this mode, you control the cursor using the left analog stick.



[Pursuit Mode]

In this mode, the Targeting Cursor locks onto enemies near the cursor and automatically tracks them- very useful when attacking a fast enemy ship or when you want to return enemy fire.

AUTOMATIC ARMAMENT ATTACKS

Armaments set to Auto will automatically fire on enemies that come within range. The accuracy of these automated attacks depends on the Control of your ship. Your ship's bridge and your Electronics Tech Level determine Control. Since you do not have to control armaments set to automatic, you can focus on maneuvering your ship. But do not waste ammunition by attacking targets outside of your objectives. If you wish to conserve ammo, set the weapon to OFF.

GIVING ORDERS TO YOUR ESCORT SHIP (ESCORT MODE & INDEPENDENT MODE)

Escort Mode

After selecting your ship and your accompanying escort ships, you can choose one of four battle group formations. Press the  button to change formation during the battle. It does take a little time for the ships to realign themselves. You can check your current formation by looking at the control panel.  **P27** Each formation has its own advantages and disadvantages.



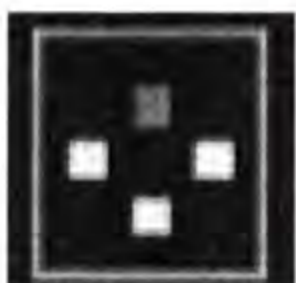
[Vertical]

A standard formation- since all ships sail in single-file, it is very useful for passing your ships through narrow channels or mine-infested waters.



[Ring]

A defensive formation- it offers better protection from enemy fire, but your ability to control the battle group will decrease, thereby lowering the accuracy of your automatic armaments.



[Spindle]

An offensive formation- your control will increase, making your automated armaments more effective, but your defense will drop, making your ship more susceptible to damage.



[Rear]

A search formation- increases your field of vision, allowing you to see more of the battle sector. However, your control will decrease, lowering the effectiveness of your automatic armaments.

Independent Mode

Press the START button and go to Escorts  **P37** under the Battle Menu to give commands to your escort ships. In addition to the Escort mode, you can choose to have your escort ships act independently. The various Independent mode orders are listed below.



[Pursuit]

Escort ships break formation and pursue enemies on their own.



[Guard]

Escort ships stop at their current location, but will fire upon enemies that come within firing range.



[Stop]

Escort ships stop at their current location. Will not attack enemy ships even if attacked first.

Ship Status Report

Taking enemy fire results in damage to your ship. You can check the level of damage with the Damage Report and Secondary Damage Warning Lamp on the control panel. ➡ **P.27**

Sections that take on damage gradually change from green to red. If the meter turns completely red, then that section will become completely destroyed and your ship will sink. Damage can be repaired by collecting certain item containers ➡ **P.35** or by issuing a repair command. ➡ **P.34**

DAMAGE REPORT

Ship damage can refer to either the hull portions (bow, port, starboard or stern) or the deck. If one of the hull portions is completely destroyed, your ship will sink and the mission ends in failure. On the other hand, if your deck is destroyed, your ship will not sink. If the deck has suffered too much damage, you will be unable to launch aircraft and your ship will be more susceptible to secondary damage.



SECONDARY DAMAGE

When your ship takes on damage from enemy fire, you may take on secondary damage such as fires or engine damage. These types of incidents cause additional problems to your ship, such as drops in speed. By equipping specific auxiliary systems, you can minimize the effects of secondary damage.

■ SECONDARY DAMAGE EFFECTS

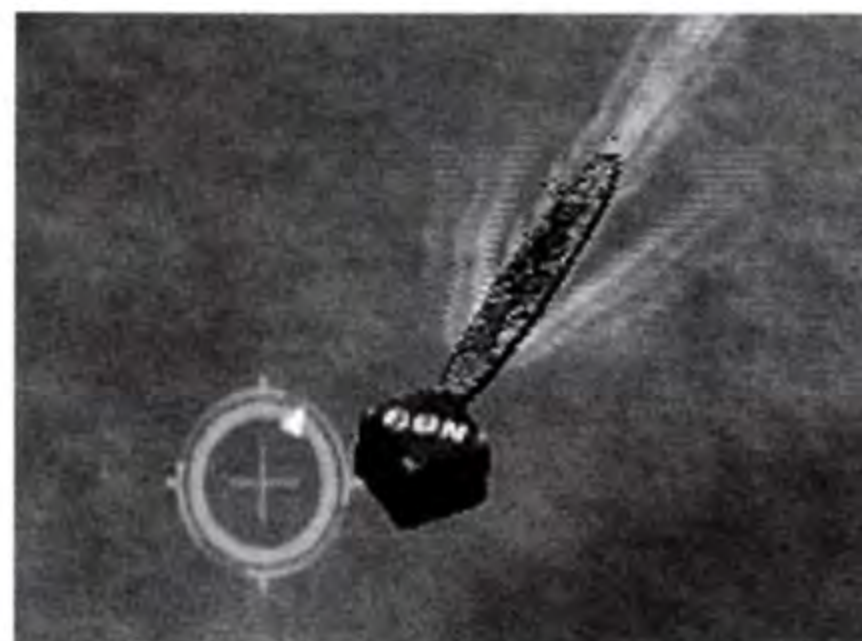
Engine		Engine output decreases
Rudder		Rudder response drops (Turning radius increases)
Flood		Speed slowly decreases
Fire		Fire breaks out in the ammo storage, causing tremendous damage

REPAIRS

Sometimes when you sink an enemy ship, enemy sailors will be left behind in their life rafts. Rescue these sailors by moving close to them. Rescuing sailors will repair your ship. These repairs will repair a small amount of damage on the ships in your battle group. You cannot store repairs for use at a later time.

Item Recovery

Sinking enemy ships can lead to the appearance of items containers. Collect item containers by simply moving over them.



■ ITEM CONTAINERS

	Damage Recovery There are three levels of damage repair: 10%, 20% and 30%.
	Funds The amount of additional funding obtained depends on the Deeds points amassed by your battle group.
	Ammo Supply Restores all of your armaments to full ammo.
	Fuel Supply Your ship's fuel tank will be replenished.
	Parts/Escort Ship Obtain escort ships or parts for ship design. You will not know which items you have received until the Results screen is displayed after the mission is complete.

Return and Retreat

After completing your mission objective, the Mission Accomplished sequence will be shown and the "Exit Battle Sector" message will appear in the upper right hand corner of the screen. After completing a mission, select Return from the Battle Menu to clear the stage. Also, if you sail your ship off of the sector map, you will withdraw from the sector and the stage will be cleared. You can exit the stage before you complete your objective by choosing Retreat from the Battle Menu, but the mission will be considered a failure. ➡ P.37



Battle Menu

Press the START button during the Battle Phase to pause the action and call up the Battle Menu. You can review battle messages and adjust game settings from this menu.



OBJECTIVE

The objectives for the current stage are displayed. Sometimes you will be given additional objectives depending on events in the game. Mission objectives are marked on the map as well. Be sure to check here often to make sure you do not miss any objectives or targets.

After completing the mission objective, your Experience points  **P.28** will increase. Mission objectives are made up of primary and secondary objectives. Meeting a primary objective successfully completes the mission, but you will need to finish the secondary objectives as well, if you wish to collect even more Experience points. However, avoid having your ship sunk before you have a chance to withdraw from the sector.



EVENT

Here you can check each of the battle messages that were transmitted during the stage.



ARMAMENTS

Check the firing setting (Manual, Auto, Off) and remaining ammo of all weapons, aircraft deployed and remaining aircraft. If you enable the All Auto option, then all armaments will be set to Auto mode. You will be unable to change this setting in the armaments control panel during battle, so if you wish to retake control, return to the Battle Menu and switch the All Auto option off. **P.30**



ESCORTS

Change the formation and orders for your escort ships. If you change the mode for your escort ships, the control panel will display the change **P.33**



RETURN/RETREAT

You can select this command to withdraw from the sector after successfully completing the primary objective. If you try to withdraw before the primary objective is met, the command will be displayed as Retreat, and the mission will end in failure. Even if you retreat from battle, you will be able to keep any funds and/or parts that you have obtained.



CONTROLS

Select from three different control schemes (Types 1-3) or customize the button configurations.



OPTIONS

Adjust game options. The game options here are the same as those found in the Start Menu. **P.09**

Results

After finishing a mission by exiting the sector or by being sunk, the Results screen will appear, and you will be graded on your performance in battle. You will also receive Deeds points, funds, items and more depending on your performance.



DEEDS, FUNDS AND ITEMS

Depending on your mission results, you will receive Deeds points, Funds or Items.

Deeds points are given in recognition of your service and are based on the level of difficulty of the mission, and the number of enemy ships you sink. Items picked up from enemy ships are kept regardless of mission success or failure. Sometimes, you can get special awards and items for sinking a certain number of enemy ships. Funds are given as payment for missions completed and enemy ships destroyed. The amount of funds can depend on your rank and what kind of ship you used.

Ship Used	Funds Received
Destroyer	5000
Carrier	2500
Cruiser	2000
Battlecarrier	600
Battleship	500

BATTLE EVALUATION

Depending on your results, you will receive a ranking from S (highest) to E (lowest). Receiving a high rank can result in additional bonus funds, points and items aside from those collected during battle. You can replay a stage as many times as you like after clearing it. Try to get S rankings on all of them!



PROMOTIONS

Upon completing a mission, you can be promoted in rank if you have earned enough Deeds points.

The higher your rank, the more funds you are able to receive after the successful completion of a mission.



Insignia	Rank	Required Deeds	Funds Received
	Apprentice Seaman	-	500
	Seaman 2 nd Class	15,000	750
	Seaman 1 st Class	35,000	1,000
	Petty Officer 2 nd Class	65,000	1,250
	Petty Officer 1 st Class	100,000	1,500
	Chief Petty Officer	140,000	2,000
	Warrant Officer	180,000	2,500
	Chief Warrant Officer	220,000	3,000
	Lieutenant	280,000	5,000
	Lt. Commander	350,000	6,500
	Commander	420,000	8,000
	Captain	500,000	10,000
	Commodore	600,000	12,500
	Rear Admiral	750,000	15,000
	Vice Admiral	900,000	20,000
	Admiral	1,100,000	30,000
	Grand Admiral	2,000,000	50,000

Ship/Item Data

Prebuilt

Nation	Ship Type	Class	Required Technology Level					Price	Hull
			AirTech	Engine	Metallurgy	Weapons	Electronics		
Japanese	Kagero Type	Destroyer	0	0	0	0	0	4000	Destroyer II
	Shimakaze Type	Destroyer	0	0	2	0	0	6000	Destroyer III
	Akizuki Type	Destroyer	0	0	3	0	0	7000	Destroyer IV
	Nagara Type	Cruiser	0	0	5	0	0	17000	Cruiser I
	Yubari Type	Cruiser	0	0	6	0	0	14000	Cruiser II
	Agano Type	Cruiser	0	0	7	0	0	21000	Cruiser III
	Ryuujou Type	Carrier	0	0	4	0	0	30000	Carrier I
	Unryuu Type	Carrier	0	0	7	0	0	40000	Carrier II
	Kongou Type	Battleship	0	0	14	0	0	65000	Battleship I
	Fusou Type	Battleship	0	0	14	0	0	59000	Battleship I
	Ise Type	Battlecarrier	0	0	17	0	0	86000	Battlecarrier I
American	Porter Class	Destroyer	0	0	0	0	0	4500	Destroyer I
	Benton Class	Destroyer	0	0	2	0	0	6000	Destroyer III
	Fletcher Class	Destroyer	0	0	3	0	0	6500	Destroyer IV
	Omaha Class	Cruiser	0	0	5	0	0	15000	Cruiser I
	Atlanta Class	Cruiser	0	0	6	0	0	22000	Cruiser II
	Cleveland Class	Cruiser	0	0	8	0	0	29000	Cruiser III
	Wasp Class	Carrier	0	0	4	0	0	35000	Carrier I
	Lexington Class	Carrier	0	0	7	0	0	67000	Carrier II
	New York Class	Battleship	0	0	13	0	0	55000	Battleship I
	Tennessee Class	Battleship	0	0	16	0	0	60000	Battleship II
	Florida Class	Battlecarrier	0	0	18	0	0	60000	Battlecarrier I
British	A Class	Destroyer	0	0	0	0	0	3500	Destroyer I
	G Class	Destroyer	0	0	2	0	0	5200	Destroyer III
	Tribal Class	Destroyer	0	0	3	0	0	5500	Destroyer IV
	Leander Class	Cruiser	0	0	4	0	0	16000	Cruiser I
	Southampton Class	Cruiser	0	0	8	0	0	26000	Cruiser II
	Exeter Class	Cruiser	0	0	10	0	0	28000	Cruiser IV
	Hermes Class	Carrier	0	0	5	0	0	28000	Carrier I
	Arc Royal Class	Carrier	0	0	9	0	0	46000	Carrier II
	Royal Sovereign Class	Battleship	0	0	12	0	0	47000	Battleship I
	Queen Elizabeth Class	Battleship	0	0	14	0	0	55000	Battleship II
	Furious Class	Battlecarrier	0	0	16	0	0	60000	Battlecarrier I
German	Z1 Class	Destroyer	0	0	0	0	0	4000	Destroyer II
	Z23 Class	Destroyer	0	0	2	0	0	6000	Destroyer III
	Z52 Class	Destroyer	0	0	3	0	0	5800	Destroyer IV
	Emden Class	Cruiser	0	0	3	0	0	16000	Cruiser I
	Leipzig Class	Cruiser	0	0	6	0	0	18000	Cruiser II
	Nuremberg Class	Cruiser	0	0	7	0	0	23000	Cruiser III
	Seidlitz Class	Carrier	0	0	4	0	0	25000	Carrier I
	Wesel Class	Carrier	0	0	9	0	0	33000	Carrier II
	Deutschland Class	Battleship	0	0	13	0	0	49000	Battleship I
	Scharnhorst Class	Battleship	0	0	16	0	0	83000	Battleship II
	Bayern Class	Battlecarrier	0	0	19	0	0	59000	Battlecarrier I

Escort Ships

Class	Escort Type	Required Technology Level					Price	Defense	Necessary Experience Points
		Air Tech	Engine	Metallurgy	Weapons	Electronics			
Destroyer	Light Destroyer A	0	0	1	1	0	400	700	8
	Light Destroyer B	0	0	1	1	0	450	750	9
	Light Destroyer C	0	0	2	3	0	500	850	10
	Light Destroyer D	0	0	3	3	0	550	900	11
	Destroyer A	0	0	0	0	0	500	700	10
	Destroyer B	0	0	4	1	0	550	750	11
	Destroyer C	0	0	3	3	0	600	850	12
	Destroyer D	0	0	4	3	0	650	900	13
	Anti-Air Destroyer A	0	0	0	0	0	500	700	9
	Anti-Air Destroyer B	0	0	7	1	0	550	750	10
	Anti-Air Destroyer C	0	0	6	3	0	600	850	11
	Anti-Air Destroyer D	0	0	7	3	0	650	900	12
Cruiser	Cruiser A	0	0	8	2	0	2000	2000	20
	Cruiser B	0	0	9	2	0	2300	2150	22
	Cruiser C	0	0	10	2	0	2500	2350	24
	Cruiser D	0	0	11	2	0	2800	2500	26
	Heavy Cruiser A	0	0	10	4	0	2500	2500	35
	Heavy Cruiser B	0	0	11	4	0	2800	2650	36
	Heavy Cruiser C	0	0	12	4	0	3000	2850	37
	Heavy Cruiser D	0	0	13	4	0	3200	3000	38
	Anti-Air Cruiser A	0	0	9	3	0	2500	2000	30
	Anti-Air Cruiser B	0	0	10	3	0	2800	2150	31
	Anti-Air Cruiser C	0	0	11	3	0	3000	2350	32
	Anti-Air Cruiser D	0	0	12	3	0	3200	2500	33
Battleship	Battleship A	0	0	15	5	0	8000	5500	100
	Battleship B	0	0	16	5	0	10000	6000	110
	Battleship C	0	0	17	5	0	12000	6500	120
	Battleship D	0	0	18	5	0	13000	7000	130
	Heavy Battleship A	0	0	19	6	0	14000	7500	150
	Heavy Battleship B	0	0	20	6	0	15000	8000	160
	Heavy Battleship C	0	0	21	6	0	16000	9000	180
	Heavy Battleship D	0	0	22	6	0	17000	10000	200
	Anti-Air Battleship	0	0	20	6	0	15000	9000	170
Support Ship	Fuel Supply Ship A	0	0	0	0	0	200	1000	5
	Fuel Supply Ship B	0	0	2	0	0	500	2000	5
	Ammo Supply Ship A	0	0	0	0	0	200	2000	5
	Ammo Supply Ship B	0	0	2	0	0	500	2000	5
	Supply Ship	0	0	5	0	0	1000	3000	5
	Artillery Control Ship	0	0	5	0	7	5000	3000	5
	Guided Anti-Wave Ship	0	0	14	0	8	10000	1500	5
	EM Shield Ship	0	0	14	0	13	20000	1500	100

Hull

Nation	Ship Type	Required Technology Level					Price	Weight	# of aircraft to load	Defense
		Air Tech	Engine	Metallurgy	Weapons	Electronics				
Japanese	Destroyer I	0	0	0	0	0	250	700	0	300
	Destroyer II	0	0	1	0	0	500	800	0	400
	Destroyer III	0	0	2	0	0	750	900	0	500
	Destroyer IV	0	0	3	0	0	1000	950	0	500
	Cruiser I	0	0	5	0	0	2000	1200	2	570
	Cruiser II	0	0	6	0	0	3000	1000	2	525
	Cruiser III	0	0	7	0	0	4500	1350	2	600
	Cruiser IV	0	0	8	0	0	6000	1500	2	675
	Carrier I	0	0	4	0	0	5000	1600	10	420
	Carrier II	0	0	7	0	0	10000	2200	13	720
	Carrier III	0	0	11	0	0	20000	2400	15	840
	Battleship I	0	0	14	0	0	25000	2700	2	1950
	Battleship II	0	0	16	0	0	30000	2500	2	2100
	Battleship III	0	0	17	0	0	35000	2800	5	2100
American	Destroyer I	0	0	0	0	0	250	700	0	410
	Destroyer II	0	0	1	0	0	500	800	0	460
	Destroyer III	0	0	2	0	0	750	900	0	500
	Destroyer IV	0	0	3	0	0	1000	950	0	560
	Cruiser I	0	0	5	0	0	2250	1100	2	450
	Cruiser II	0	0	6	0	0	4500	1300	2	600
	Cruiser III	0	0	8	0	0	7500	1500	2	750
	Cruiser IV	0	0	9	0	0	8000	1800	2	1050
	Carrier I	0	0	4	0	0	10000	2300	10	600
	Carrier II	0	0	7	0	0	25000	3000	13	800
	Carrier III	0	0	12	0	0	20000	2600	16	900
	Battleship I	0	0	13	0	0	26000	2700	2	1950
	Battleship II	0	0	16	0	0	30000	2800	2	2100
	Battlecarrier I	0	0	18	0	0	30000	2300	5	2250
British	Destroyer I	0	0	0	0	0	250	700	0	340
	Destroyer II	0	0	1	0	0	500	800	0	360
	Destroyer III	0	0	2	0	0	750	900	0	400
	Destroyer IV	0	0	3	0	0	1000	1000	0	440
	Cruiser I	0	0	4	0	0	2250	1100	2	450
	Cruiser II	0	0	6	0	0	5250	1200	2	600
	Cruiser III	0	0	8	0	0	7500	1450	2	750
	Cruiser IV	0	0	10	0	0	8000	1800	2	900
	Carrier I	0	0	5	0	0	4500	2500	9	450
	Carrier II	0	0	9	0	0	10000	2700	12	900
	Carrier III	0	0	15	0	0	20000	2800	13	1200
	Battleship I	0	0	12	0	0	20000	2800	2	1950
	Battleship II	0	0	14	0	0	24000	2700	2	2100
	Battlecarrier I	0	0	16	0	0	30000	2400	5	2100
German	Destroyer I	0	0	0	0	0	250	700	0	380
	Destroyer II	0	0	1	0	0	500	800	0	440
	Destroyer III	0	0	2	0	0	750	900	0	500
	Destroyer IV	0	0	3	0	0	1000	1000	0	540
	Cruiser I	0	0	5	0	0	2000	1100	2	450
	Cruiser II	0	0	6	0	0	3000	1200	2	600
	Cruiser III	0	0	7	0	0	4500	1400	2	675
	Cruiser IV	0	0	8	0	0	6000	1500	2	750
	Carrier I	0	0	4	0	0	4000	1900	8	500
	Carrier II	0	0	9	0	0	7500	2000	11	700
	Carrier III	0	0	14	0	0	25000	3000	14	1000
	Battleship I	0	0	13	0	0	19000	2700	2	1950
	Battleship II	0	0	14	0	0	28000	2900	2	2100
	Battlecarrier I	0	0	19	0	0	28000	2250	5	2250

*Defense increases according to Electronics Level. Numbers in the list correspond to Electronics Level 1.

Engine/Boiler/Turbine

Engine Name	Required Technology Level					Price	Weight	Output	Fuel Efficiency (During Cruising)	Turnover
	Air Tech	Engine	Metallurgy	Weapons	Electronics					
DD Boiler I	0	0	0	0	0	160	220	2300	0.6	-
DD Boiler II	0	1	0	0	0	180	240	2800	0.7	-
DD Boiler III	0	2	0	0	0	200	250	3300	0.6	-
DD Boiler IV	0	3	0	0	0	250	250	3700	0.5	-
DD Boiler V	0	4	0	0	0	300	270	4200	0.5	-
DD Boiler VI	0	7	0	0	0	350	300	4800	0.4	-
DD Boiler VII	0	11	0	0	0	400	320	5500	0.4	-
CC Boiler I	0	0	0	0	0	400	50	1200	0.6	-
CC Boiler II	0	4	0	0	0	500	50	1450	0.7	-
CC Boiler III	0	6	0	0	0	600	70	1700	0.6	-
CC Boiler IV	0	9	0	0	0	700	85	2000	0.5	-
CC Boiler V	0	11	0	0	0	800	100	2300	0.5	-
CC Boiler VI	0	14	0	0	0	900	125	2850	0.4	-
CC Boiler VII	0	16	0	0	0	1000	140	3500	0.4	-
CV Boiler I	0	0	0	0	0	600	100	1650	0.5	-
CV Boiler II	0	5	0	0	0	750	100	1900	0.6	-
CV Boiler III	0	8	0	0	0	1000	160	2200	0.5	-
CV Boiler IV	0	11	0	0	0	1250	200	2500	0.4	-
CV Boiler V	0	15	0	0	0	1500	230	3100	0.4	-
CV Boiler VI	0	19	0	0	0	1750	220	3600	0.3	-
CV Boiler VII	0	23	0	0	0	2000	240	4000	0.3	-
BB Boiler I	0	0	0	0	0	800	100	1800	0.5	-
BB Boiler II	0	15	0	0	0	1000	100	2200	0.6	-
BB Boiler III	0	16	0	0	0	1250	160	2600	0.5	-
BB Boiler IV	0	19	0	0	0	1500	200	3200	0.4	-
BB Boiler V	0	22	0	0	0	1750	230	3800	0.4	-
BB Boiler VI	0	25	0	0	0	2000	220	4500	0.3	-
BB Boiler VII	0	27	0	0	0	2250	240	5000	0.3	-
Atomic Engine I	0	18	18	0	18	20000	500	4000	-	-
Atomic Engine II	0	19	19	0	19	24000	700	6500	-	-
Atomic Engine III	0	20	20	0	20	28000	1000	9000	-	-
Atomic Engine IV	0	21	21	0	21	31000	1250	12500	-	-
Atomic Engine V	0	22	22	0	22	34000	1400	14000	-	-
Atomic Engine VI	0	25	25	0	25	37000	1000	12500	-	-
Atomic Engine VII	0	27	27	0	27	42000	1200	15000	-	-
DD Turbine I	0	0	0	0	0	100	150	-	-	50
DD Turbine II	0	1	0	0	0	200	170	-	-	55
DD Turbine III	0	2	0	0	0	300	190	-	-	60
DD Turbine IV	0	3	0	0	0	300	200	-	-	65
DD Turbine V	0	5	0	0	0	400	200	-	-	70
DD Turbine VI	0	8	0	0	0	500	180	-	-	75
DD Turbine VII	0	12	0	0	0	750	190	-	-	80
Turbine I	0	0	0	0	0	500	100	-	-	25
Turbine II	0	2	0	0	0	1000	120	-	-	28
Turbine III	0	3	0	0	0	1500	140	-	-	31
Turbine IV	0	5	0	0	0	1750	150	-	-	34
Turbine V	0	10	0	0	0	2200	160	-	-	36
Turbine VI	0	15	0	0	0	2500	125	-	-	39
Turbine VII	0	20	0	0	0	3000	130	-	-	41
Gas Turbine I	0	20	20	0	20	3000	100	2500	0.6	100
Gas Turbine II	0	21	21	0	21	3700	120	3300	0.7	100
Gas Turbine III	0	22	22	0	22	4500	140	4100	0.6	100
Gas Turbine IV	0	23	23	0	23	5300	150	5000	0.5	100
Gas Turbine V	0	24	24	0	24	6000	150	6000	0.5	100
Gas Turbine VI	0	26	26	0	26	7000	160	7000	0.4	100
Gas Turbine VII	0	28	28	0	28	8000	180	8000	0.4	100

Armaments/Guns

Weapon Name	Caliber	Required Technology Level					Price	Weight				Offensive Ability			
		Air Tech	Engine	Metallurgy	Weapons	Electronics		Single barrel	Multi-barrel	3-barrel	4-barrel	Offense	Range	Field	Load
10cm	45	0	0	0	0	0	125	4	10	14	-	6	1000	300	36
	50	0	0	0	0	0	150	5	11	16	-	7	1125	320	30
	55	0	0	1	1	0	175	6	12	19	-	8	1125	340	32
	60	0	0	3	3	0	225	7	14	22	-	9	1250	360	30
	65	0	0	4	4	0	300	8	16	25	-	10	1375	380	24
12.7cm	45	0	0	0	0	0	150	5	12	17	-	7	1125	320	40
	50	0	0	0	2	0	175	6	13	19	-	8	1250	340	40
	55	0	0	1	3	0	225	7	14	22	-	9	1375	360	38
	60	0	0	3	5	0	250	8	16	25	-	10	1375	380	36
	65	0	0	5	7	0	325	9	18	28	-	11	1500	400	34
14cm	50	0	0	2	3	0	300	8	18	26	35	10	1250	360	46
	55	0	0	3	5	0	350	9	19	29	38	11	1375	380	48
	60	0	0	4	6	0	400	10	20	31	42	12	1375	400	44
	65	0	0	6	8	0	500	11	22	34	46	13	1500	420	40
15.5cm	45	0	0	1	4	0	300	10	24	35	46	12	1500	380	90
	50	0	0	2	7	0	350	11	25	37	49	13	1625	400	80
	55	0	0	4	9	0	425	12	26	40	53	14	1750	420	70
	60	0	0	6	10	0	550	13	28	42	56	15	1875	440	66
	65	0	0	8	12	0	650	14	29	44	60	16	2000	460	60
20.3cm	50	0	0	3	6	0	500	21	42	60	76	21	2000	420	110
	55	0	0	5	8	0	550	23	46	66	83	23	2125	440	100
	60	0	0	7	11	0	700	25	50	71	90	25	2250	460	90
	65	0	0	9	14	0	850	27	52	77	97	27	2375	480	80
25.4cm	50	0	0	4	12	0	600	41	82	117	148	41	2125	460	170
28cm	50	0	0	5	13	0	650	55	110	157	198	55	2250	500	230
30.5cm	45	0	0	5	14	0	600	64	128	182	230	64	2125	520	280
	50	0	0	6	15	0	700	71	142	202	256	71	2375	540	260
35.6cm	45	0	0	5	7	0	800	102	204	291	367	102	2375	560	300
	50	0	0	8	15	0	1000	113	226	322	407	113	2500	580	280
38.1cm	45	0	0	6	16	0	1000	124	248	353	446	124	2500	620	360
	50	0	0	9	19	0	1200	138	276	393	497	138	2625	640	320
41cm	45	0	0	8	15	0	1300	155	310	442	558	155	2625	680	360
	50	0	0	11	18	0	1600	172	344	490	619	172	2750	700	360
43.2cm	45	0	0	10	17	0	1600	181	362	516	652	181	2625	720	360
	50	0	0	13	21	0	1900	202	404	576	727	202	2875	740	340
46cm	45	0	0	12	20	0	2200	219	438	624	788	220	2875	800	360
	50	0	0	16	23	0	2700	243	486	693	875	243	3000	820	300
50.8cm	45	0	0	15	22	0	2800	295	590	841	1062	295	3125	840	360
	50	0	0	19	24	0	4000	328	656	935	1181	328	3375	860	320
56cm	45	0	0	18	23	0	3500	395	790	1126	-	395	3375	880	360
	50	0	0	22	26	0	5000	439	878	1251	-	440	3625	900	350
61cm	45	0	0	21	25	0	4500	511	1022	1456	-	512	3750	920	480
	50	0	0	25	28	0	6000	567	1134	1616	-	567	4000	940	470
80cm	45	0	0	24	27	0	10000	1152	2073	-	-	1152	3750	800	480
	50	0	0	28	29	0	20000	1280	2304	-	-	1280	4000	820	470
100cm	45	0	0	27	28	0	12000	2250	-	-	-	3000	5375	700	540
	50	0	0	30	30	0	24000	2500	-	-	-	3250	5625	720	520

Armaments/Others

Weapon Name	Required Technology Level					Price	Weight	Offensive Ability			
	Air Tech	Engine	Metallurgy	Weapons	Electronics			Offense	Range	Field	Load
45cm Torpedoes	0	0	0	0	0	100	3	80	1000	32	156
48.3cm Torpedoes	0	0	0	1	0	125	3	120	1400	32	160
53.3cm Torpedoes	0	0	0	2	0	175	4	150	1700	32	164
61cm Torpedoes	0	0	0	6	0	250	5	200	2000	32	172
45cm Oxygen Torpedoes	0	3	0	4	0	120	5	120	1600	32	164
48.3cm Oxygen Torpedoes	0	3	0	8	0	150	6	140	1800	32	176
53.3cm Oxygen Torpedoes	0	3	0	9	0	200	7	170	2000	32	180
61cm Oxygen Torpedoes	0	4	0	11	0	300	8	300	2300	32	172
32.4cm Guided Torpedoes	0	5	0	12	5	500	7	100	3000	32	140
45cm Guided Torpedoes	0	6	0	15	5	700	9	150	4000	32	156
48.3cm Guided Torpedoes	0	6	0	17	5	770	10	170	4500	32	156
53.3cm Guided Torpedoes	0	7	0	19	5	850	12	200	5000	32	160
61cm Guided Torpedoes	0	8	0	22	5	1000	14	300	6000	32	164
Anti-Sub Torpedoes	0	0	0	13	0	750	6	200	2000	32	156
Depth Charge	0	0	0	0	0	50	20	25	500	64	90
Autonomous Depth Charge	0	0	0	7	0	200	25	40	900	128	60
Anti-Sub Missile	0	0	0	5	0	100	30	35	750	128	60
New Anti-Sub Missile	0	0	0	10	0	500	30	45	1000	64	48
40mm Heavy Chain Gun	0	0	6	14	12	500	20	6	900	128	29
57mm Heavy Chain Gun	0	0	6	16	14	1000	25	8	1000	256	30
88mm Multi-Barrel Chain Gun	0	0	10	19	15	2000	30	15	1600	160	33
7.7mm Machine Guns	0	0	0	0	0	5	1	1	450	128	20
12.7mm Machine Guns	0	0	0	1	0	7	2	1	450	128	16
20mm Machine Guns	0	0	0	2	0	12	2	2	650	128	12
25mm Machine Guns	0	0	0	3	0	10	2	3	650	128	28
28mm Machine Guns	0	0	0	4	0	12	3	3	650	128	32
37mm Machine Guns	0	0	0	6	0	15	3	4	650	128	36
40mm Machine Guns	0	0	0	9	0	20	4	4	750	128	40
Anti-Air Missile VLS	0	0	0	12	0	2000	40	200	5000	32	200
Anti-Ship Missile VLS	0	0	0	18	0	3000	40	400	5000	32	200
Anti-Sub Missile VLS	0	0	0	29	0	2500	40	250	5000	32	200
Anti-Air Missile Launcher	0	0	0	9	0	1500	80	200	5000	64	250
Anti-Ship Missile Launcher	0	0	0	15	0	2000	80	500	5000	64	250
Anti-Sub Missile Launcher	0	0	0	17	0	2000	80	250	5000	64	250
12cm 30b Rocket Launcher	0	0	0	7	0	1000	10	30	1600	512	60
20cm 12b Rocket Launcher	0	0	0	10	0	1500	20	44	1800	512	120
Heavy X-ray Ordnance	0	0	20	21	20	40000	1000	1500	2000	16	180
New X-ray Ordnance	0	0	25	25	25	55000	1500	2000	2400	16	150
Krypton Laser	0	0	30	30	30	60000	2000	1700	2200	16	180
Anti-Air Pulse Laser	0	0	20	25	20	5000	100	20	1100	16	6
New AGS 155mm Cannon	0	0	0	20	0	9000	40	30	4000	6	20
New Rapid Fire 76mm Cannon	0	0	0	20	0	9000	15	10	1300	128	8

Equipment/Forward Bridge/AFT Bridge

Nation	Bridge Name	Required Level					Price	Weight	Control	Search	
		Air Tech	Engine	Metallurgy	Weapons	Electronics				Above Water	Under Water
Japanese	DD Fwd Bridge I	0	0	0	0	0	200	20	25	4	3
	DD Fwd Bridge II	0	0	1	0	0	240	20	26	3	2
	CC Fwd Bridge I	0	0	5	0	0	1000	25	24	4	2
	CC Fwd Bridge II	0	0	7	0	0	1500	30	26	5	2
	CV Fwd Bridge I	0	0	3	0	0	3000	30	47	12	1
	CV Fwd Bridge II	0	0	5	0	0	2000	25	48	11	1
	BB Fwd Bridge I	0	0	15	0	0	4000	30	25	6	1
	BB Fwd Bridge II	0	0	16	0	0	5000	35	25	6	1
	DD Aft Bridge I	0	0	0	0	0	200	5	15	1	1
	DD Aft Bridge II	0	0	1	0	0	250	5	16	1	2
	CC Aft Bridge I	0	0	6	0	0	1500	10	14	2	1
	CC Aft Bridge II	0	0	8	0	0	2250	15	18	3	1
	BB Aft Bridge I	0	0	16	0	0	4000	10	14	7	1
	BB Aft Bridge II	0	0	17	0	0	7000	10	18	7	1
American	DD Fwd Bridge I	0	0	0	0	0	200	15	25	3	2
	DD Fwd Bridge II	0	0	1	0	0	250	25	26	3	2
	CC Fwd Bridge I	0	0	5	0	0	1500	35	25	6	1
	CC Fwd Bridge II	0	0	8	0	0	1750	30	26	5	1
	CV Fwd Bridge I	0	0	3	0	0	4000	35	50	14	2
	CV Fwd Bridge II	0	0	5	0	0	3500	45	46	13	3
	BB Fwd Bridge I	0	0	14	0	0	4000	35	25	7	1
	BB Fwd Bridge II	0	0	17	0	0	5000	40	26	6	1
	DD Aft Bridge I	0	0	0	0	0	200	5	15	2	2
	DD Aft Bridge II	0	0	1	0	0	260	10	16	2	2
	CC Aft Bridge I	0	0	6	0	0	1500	15	13	2	1
	CC Aft Bridge II	0	0	8	0	0	2000	25	16	3	1
	BB Aft Bridge I	0	0	15	0	0	4000	10	13	8	1
	BB Aft Bridge II	0	0	19	0	0	5000	15	16	6	1
British	DD Fwd Bridge I	0	0	0	0	0	200	15	25	3	2
	DD Fwd Bridge II	0	0	1	0	0	280	20	26	3	2
	CC Fwd Bridge I	0	0	4	0	0	1750	35	25	4	1
	CC Fwd Bridge II	0	0	7	0	0	1500	30	27	5	1
	CV Fwd Bridge I	0	0	2	0	0	3000	30	48	14	1
	CV Fwd Bridge II	0	0	5	0	0	4000	30	49	12	3
	BB Fwd Bridge I	0	0	13	0	0	4000	35	24	9	1
	BB Fwd Bridge II	0	0	16	0	0	5500	40	25	8	1
	DD Aft Bridge I	0	0	0	0	0	200	10	14	2	2
	DD Aft Bridge II	0	0	1	0	0	260	5	17	1	1
	CC Aft Bridge I	0	0	5	0	0	1500	10	17	3	1
	CC Aft Bridge II	0	0	8	0	0	2000	15	18	4	1
	BB Aft Bridge I	0	0	14	0	0	5000	15	14	8	1
	BB Aft Bridge II	0	0	17	0	0	4000	15	14	8	1
German	DD Fwd Bridge I	0	0	0	0	0	320	25	26	3	2
	DD Fwd Bridge II	0	0	1	0	0	200	20	30	3	3
	CC Fwd Bridge I	0	0	5	0	0	1500	25	24	5	2
	CC Fwd Bridge II	0	0	6	0	0	1750	30	25	6	1
	CV Fwd Bridge I	0	0	4	0	0	3600	30	47	12	2
	CV Fwd Bridge II	0	0	6	0	0	3000	25	48	10	1
	BB Fwd Bridge I	0	0	14	0	0	4000	45	25	8	1
	BB Fwd Bridge II	0	0	15	0	0	6000	40	26	9	1
	DD Aft Bridge I	0	0	0	0	0	240	10	14	2	1
	DD Aft Bridge II	0	0	1	0	0	200	8	15	2	1
	CC Aft Bridge I	0	0	6	0	0	1750	12	16	3	1
	CC Aft Bridge II	0	0	7	0	0	1500	15	16	4	1
	BB Aft Bridge I	0	0	14	0	0	4000	20	15	8	1
	BB Aft Bridge II	0	0	15	0	0	6000	15	17	7	1

*Control increases in accordance to the Electronics Level. Values on the list correspond to Electronics Level 1.

Equipments/Auxiliary Systems

Auxiliary System Name	Required Technology Level					Price	Weight	Effect
	Air Tech	Engine	Metallurgy	Weapons	Electronics			
Electronic Targeting I	0	0	0	0	7	5000	20	Lock-on sphere for intercept weapons +6
Electronic Targeting II	0	0	0	0	12	10000	22	Lock-on sphere for intercept weapons +16
Electronic Targeting III	0	0	0	0	16	15000	24	Lock-on sphere for intercept weapons +26
Electronic Targeting IV	0	0	0	0	20	25000	22	Lock-on sphere for intercept weapons +36
Electronic Blocking I	0	0	0	0	8	3000	20	Enemy radar ability -21
Electronic Blocking II	0	0	0	0	13	6000	22	Enemy radar ability -31
Electronic Blocking III	0	0	0	0	17	10000	24	Enemy radar ability -41
Electronic Blocking IV	0	0	0	0	22	20000	22	Enemy radar ability-51
Sonar I	0	0	0	0	0	500	20	Sonar search range +8
Sonar II	0	0	0	0	6	2500	22	Sonar search range +10
Sonar III	0	0	0	0	12	5000	24	Sonar search range +12
Sonar IV	0	0	0	0	18	10000	22	Sonar search range +14
Sonar V	0	0	0	0	27	20000	20	Sonar search range +16
Radar I	0	0	0	0	0	1000	20	Radar search range +10
Radar II	0	0	0	0	5	3000	22	Radar search range +12
Radar III	0	0	0	0	15	5000	24	Radar search range +14
Radar IV	0	0	0	0	22	10000	22	Radar search range +16
Radar V	0	0	0	0	28	20000	20	Radar search range +18
Firing Delay System I	0	0	0	0	2	2000	20	Salvo concentration -10%
Firing Delay System II	0	0	0	0	7	6000	22	Salvo concentration -20%
Firing Delay System III	0	0	0	0	13	10000	24	Salvo concentration -27%
Firing Delay System IV	0	0	0	0	24	20000	22	Salvo concentration -35%
Firing Delay System V	0	0	0	0	29	30000	20	Salvo concentration -42%
Auto-load System I	0	0	0	0	3	4000	20	Load time 15% shorter
Auto-load System II	0	0	0	0	9	8000	22	Load time 20% shorter
Auto-load System III	0	0	0	0	14	12000	24	Load time 30% shorter
Auto-load System IV	0	0	0	0	25	25000	22	Load time 40% shorter
Auto-load System V	0	0	0	0	30	40000	20	Load time 50% shorter
Auto Fire Extinguisher I	0	0	0	0	3	3000	20	Fire extinguish success rate +5%
Auto Fire Extinguisher II	0	0	0	0	9	6500	22	Fire extinguish success rate +10%
Auto Fire Extinguisher III	0	0	0	0	15	10000	24	Fire extinguish success rate +16%
Auto Fire Extinguisher IV	0	0	0	0	23	20000	22	Fire extinguish success rate +26%
Auto Fire Extinguisher V	0	0	0	0	29	30000	20	Fire extinguish success rate +36%
Emergency Hull Purge I	0	0	0	0	3	3000	20	Hull integrity +5%
Emergency Hull Purge II	0	0	0	0	9	6500	22	Hull integrity +10%
Emergency Hull Purge III	0	0	0	0	15	10000	24	Hull integrity +16%
Emergency Hull Purge IV	0	0	0	0	23	20000	22	Hull integrity +26%
Emergency Hull Purge V	0	0	0	0	29	30000	20	Hull integrity +36%
Electromagnetic shield I	0	0	0	0	13	50000	50	Damage from energy weapons -20%
Electromagnetic shield II	0	0	0	0	16	60000	70	Damage from energy weapons -30%
Electromagnetic shield III	0	0	0	0	20	70000	80	Damage from energy weapons -40%
Electromagnetic shield IV	0	0	0	0	25	80000	100	Damage from energy weapons -50%
Advanced Radar I	0	0	0	0	14	50000	32	Increase range at sea by +7
Advanced Radar II	0	0	0	0	17	60000	34	Increase range at sea by +9
Advanced Radar III	0	0	0	0	20	70000	38	Increase range at sea by +11
Settlement Strengthening Device	0	0	0	10	20	100000	20	Increase optical weapon attacks by +10%
Settlement Strengthening Device I	0	0	0	14	21	120000	22	Increase optical weapon attacks by +15%
Settlement Strengthening Device II	0	0	0	18	23	140000	24	Increase optical weapon attacks by +20%
Gravitational Field I	0	0	0	0	19	50000	50	Damage from projectile weapons decreased by -20%
Gravitational Field II	0	0	0	0	21	500000	126	Damage from projectile weapons decreased by -30%
Gravitational Field III	0	0	0	0	24	800000	130	Damage from projectile weapons decreased by -40%
Aegis System	0	0	0	21	21	1000000	30	Simultaneous Lock-on +2

Aircraft

Nation	Aircraft Name	Aircraft Type	Necessary Technology Level					Price	Night Flight	Endurance
			Air Tech	Engine	Metallurgy	Weapons	Electronics			
Japanese	A5m Type 96	Fighter	0	0	0	0	0	40		30
	A6M Model 21	Fighter	1	0	0	0	0	70		40
	A6M Model 32	Fighter	2	0	0	0	0	80		45
	J7W2 Shinrai	Fighter	3	0	0	0	0	90		55
	N1K2 Shiden	Fighter	4	0	0	0	0	100		55
	D3A Type 99	Bomber	0	0	0	0	0	40		35
	D4Y Suisei Model 12	Bomber	4	0	0	0	0	120		50
	D4Y Suisei Model 43	Bomber	8	0	0	0	2	140	✓	55
	B5N Type 97	Bomber	0	0	0	0	0	40		30
	B6N Tenzan	Bomber	6	0	0	0	0	80		45
	Type 97-Scout	Ship Scout	0	0	0	0	0	40		35
	Type 2-Scout	Ship Scout	6	0	0	0	0	110		45
American	F2A Buffalo	Fighter	0	0	0	0	0	40		35
	P38L Lightning	Fighter	1	0	0	0	1	70	✓	60
	F4F WildCat	Fighter	1	0	0	0	0	80		50
	F6F HellCat	Fighter	3	0	0	0	1	120	✓	60
	F7FTigerCat	Fighter	6	0	0	0	0	160		70
	SBD Dauntless	Bomber	0	0	0	0	0	40		45
	SB2U Vindicator	Bomber	2	0	0	0	1	80	✓	50
	SB2C-1 Hell Diver	Bomber	7	0	0	0	2	120	✓	55
	TBD Devastator	Torpedo Bomber	0	0	0	0	0	40		40
	TBF-1 Avenger	Torpedo Bomber	4	0	0	0	1	80	✓	55
	F4F-7-Scout	Scout	0	0	0	0	0	90		50
	F6F-5P-Scout	Scout	7	0	0	0	2	160	✓	60
British	Rock Mk1	Fighter	0	0	0	0	0	40		30
	Sea Hurricane	Fighter	0	0	0	0	0	40		35
	Fulmar	Fighter	1	0	0	0	0	60		45
	S.Fire Mk1	Fighter	1	0	0	0	0	40		45
	Beaufighter	Fighter	1	0	0	0	1	70	✓	35
	Skua	Bomber	0	0	0	0	0	80		40
	Battle	Bomber	4	0	0	0	0	120	✓	65
	Blenheim	Bomber	8	0	0	0	2	140	✓	80
	Swordfish	Torpedo Bomber	0	0	0	0	0	40		25
	Albacore	Torpedo Bomber	2	0	0	0	0	80		30
	S.FirePR.Mk1	Scout	1	0	0	0	0	40		45
	Mosquito PR.Mk16	Scout	9	0	0	0	2	160	✓	85
German	Bf109	Fighter	0	0	0	0	0	60		50
	Bf109F	Fighter	2	0	0	0	0	70	✓	50
	Bf110	Fighter	3	0	0	0	1	80	✓	50
	Fw190	Fighter	4	0	0	0	0	120		55
	Fw190D	Fighter	5	0	0	0	0	160	✓	60
	Ju88A	Bomber	1	0	0	0	0	80		55
	Ju87B Stuka	Bomber	2	0	0	0	0	50		50
	Ju87C Stuka	Bomber	3	0	0	0	0	110		50
	Fi167	Torpedo Bomber	0	0	0	0	0	40		45
	Ju87D Stuka	Torpedo Bomber	4	0	0	0	0	60		50
	Ju88D	Scout	1	0	0	0	0	90		70
	Fledermaus	Scout	9	0	0	0	2	200	✓	60

*"Ship/Item Data" shown in the manual is not a complete listing of all Ship/Item Data. More equipment is available and some parts cannot be purchased with the Ship/Item command.

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