Up Periscope!

ADVANCED SUBMARINE SIMULATION

COMMODORE 64™/128™

OPERATIONS HANDBOOK

UP PERISCOPE!

SUBMARINE OPERATIONS HANDBOOK

**For Commodore 64™/128™ computers
Program Number C64-UP1**

NOTICE: READ THIS MANUAL FIRST. WHEN YOU ARE FAMILIAR WITH SUBMARINE OPERATIONS, YOU CAN MOVE ON TO THE *"SUBMARINE ACTION IN THE PACIFIC"* MANUAL.

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INTRODUCTION

During World War II, battles in the Pacific were fought on the land, air, and sea, but the force that most greatly reduced the enemy's ability to fight back was the fleet class submarine. Over five-million tons of Japanese military and supply ships were destroyed (214 naval ships, 1178 merchant ships). This isolated the enemy, reduced morale, and reduced their power to make war to such an extent that shortly before Japan surrendered, U.S. submarines had to sail into enemy harbors to find any ships left to sink.

Up Periscope! puts *you* in command of a WWII fleet class submarine. A control panel keeps you informed about conditions that a submarine commander constantly needs to know. In addition, seven auxiliary screens present information normally relayed by other crewmen (bridge view, damage report, radar report, etc.).

Up Periscope! uses true three-dimensional graphics to portray ships and shoreline views, thus adding greatly to the realism. The first time a destroyer heads toward you to ram you, there will be no doubt that you'd better dive fast!

Familiarize yourself with your submarine by reading this handbook and going on a "shakedown cruise". Once familiar with the submarine, move on to the *"Submarine Action in the Pacific"* manual to relive historical situations, go on lengthy patrols, and learn about the U.S. submarine fleet's glorious history.

Good hunting, and good luck in your submariner career!

RUNNING THE PROGRAM

COMMODORE 64

CONTROL
PORT
2

COMMODORE 64 OR C64

1541 OR 1571 DISK DRIVE

OPTIONAL JOYSTICK
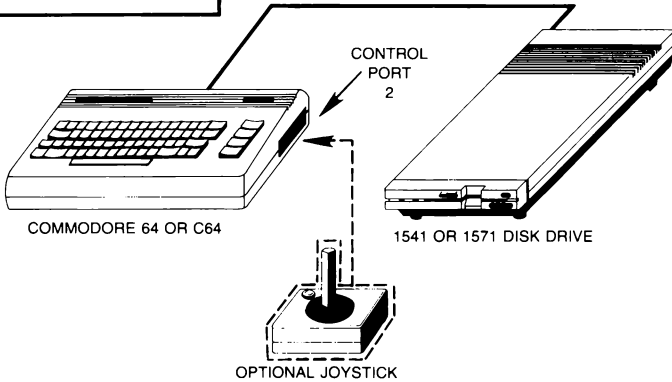
1. Turn on disk drive and insert disk into drive.
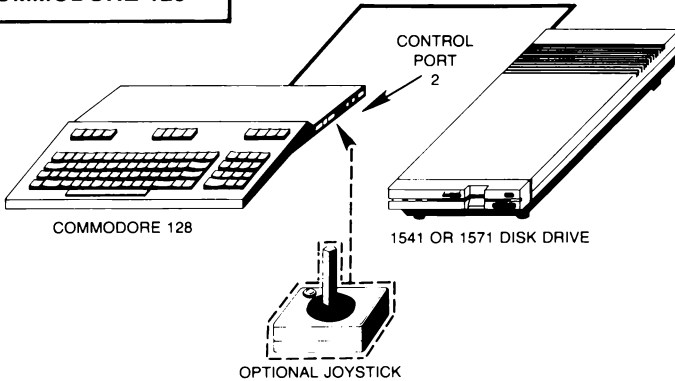2. Turn on C64 and type: LOAD "*", 8, 1 [return].
3. The program takes three minutes to load.

COMMODORE 128

CONTROL
PORT
2

COMMODORE 128

1541 OR 1571 DISK DRIVE

OPTIONAL JOYSTICK

1. Turn on disk drive and insert disk into drive.
2. Turn on Commodore 128. The disk automatically boots.

QUICK SHAKEDOWN CRUISE

Follow these steps to get a feel for the program and to check proper disk operation:

1. Boot up the disk using the procedure above. The program will load and a menu should appear.

2. Select item 1 (REFRESHER TRAINING AT NEW LONDON) by pressing [1].

3. The Features Menu will appear. Press [C] to continue.

4. The submarine control screen will appear at the screen bottom, and the bridge view at the screen top. You are now at New London, ready for some torpedo practice.

5. Press the [>] key. This pans the bridge view to the right. Notice the shoreline, waves, and target ships as they pan by.

6. Press [F1]. This changes view to the binoculars. Notice the torpedo sight.

7. When a ship comes into range it will be highlighted. Press the [/] key to stop panning. Use the [<], [>], and [/] pan-control keys to aim at a target ship.

8. Press the [1] key (on the keyboard top row, not the keypad) to launch torpedo #1. Notice the torpedo moving toward the target ship and the torpedo status indicator on the left side of the control panel. Torpedo tube #1 is now empty.

9. Press [Z] to zoom in and get a better view. Press [Z] again to zoom out.

10. After sinking a ship, press [F5] to see the chart view. Notice that the text at the top of the screen indicates which systems are active and what Function (F-) key you can press to see the radar, damage, and other systems. Try pressing these keys to view the various systems.

11. Press [+] to get the submarine moving. Go to bridge view [F1]. Notice the waves going by.

12. Press [H]. The sub will turn to the right.

13. Press [B]. The sub will dive.

14. Press [G] to center the rudder and go straight. Press [T] to level off at a constant depth. Notice that the submarine status indicator on the right side of the control panel indicates your cruising speed and depth.

15. This ends the shakedown cruise. Press [F8] to end the game.

MENU SELECTIONS

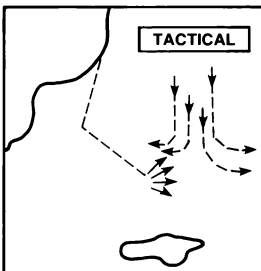## 1. SCENARIO MENUS

1	REFRESHER TRAINING AT NEW LONDON	Torpedo and gunnery practice near the shipyard where the submarine was built.
2	HISTORICAL SITUATION	Selects the Historical Situation menu.
3	PACIFIC PATROL	Selects the Pacific Patrol menu.
4	PEACETIME PATROL	Lets you practice navigation and submarine control without encountering hostile ships.
5	TRANSIT	Gives an assignment to sail to a distant location. Along the way you encounter enemy ships.
6	RESTORE SAVED GAME	Up Periscope! lets you save a game to continue later. This option lets you resume a saved game.

STRATEGIC

PACIFIC PATROL MENU

- Choose from seven historical patrols (long missions over an assigned course).

- Patrols are described in detail in "Submarine Action in the Pacific".

- Realistic features are automatically selected on Features menu. Press [C] to exit menu.

- Good for long, strategy-filled games.
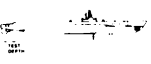
TACTICAL

HISTORICAL SITUATION MENU

- Choose one of seven historical situations faced by real submarines in WW II.

- These situations are described in detail in "Submarine Action in the Pacific".

- Realistic features are automatically selected. Press [C] on features menu unless you wish to change a feature.

- Good for short, action-filled games.

2. FEATURES MENU

OFFICER EXPERIENCE

RANK		LIEUTENANT LIEUTENANT COMMANDER COMMANDER CAPTAIN REAR ADMIRAL VICE ADMIRAL ADMIRAL • Game difficulty increases with rank • Rank will automatically advance for performance promotions
DAYS AT SEA	NOVEMBER 18	• Affects efficiency and accuracy of crew and systems • Considered for promotions

SUBMARINE FEATURES

TORPEDO TYPE		• MARK 10-Steam, slow, reliable, obsolete, used through 1942 • MARK 14-Steam, fast, unreliable through 1943 • MARK 18-Electric, fast, reliable, available late '43
SUB RELIABILITY	OUT OF ORDER	• Select between 0% and 100% reliability • 20% increments
TORPEDO DATA COMPUTER	LEAD ANGLE LOCKED	• Automatic for easy target locking • Manual for realistic use
HULL DESIGN	TEST DEPTH	• THIN HULL-Early design-300 ft. • THICK HULL-400 ft.

TACTICAL CONSIDERATIONS

ARMING RUN	DELAY	• OFF-Torpedo explodes on any impact • ON-Torpedo explosion delayed until 450 yards from sub
ENEMY EXPERTISE		• Select between 0% and 100% (20% increments) • Affects enemy evasive zigzagging, ramming, and depth charging
VISIBILITY		• Ranges from 0% to 100% • Affects how well you can see enemy ships
REPAIRS AT SEA		• YES-All damage repairable at sea (given enough time) • NO-Some items require port repair

SETTING TIME AND DATE

The time and date of the selected historical situation or patrol appear at the bottom of the features menu. The time determines day or night action, and the date determines feature availability (no Mark 18 torpedoes were available at the beginning of the war, for example).

Time and date can be changed by pressing [D], [M], and [Y] to cycle through Days, Months, and Years. Press [T] to cycle through Time by hours. Hours are expressed in military time (14:00 is 2:00 PM, early afternoon).

KEYBOARD AND JOYSTICK CONTROLS

All ship's functions can be controlled from the keyboard. Most submarine controls and viewing options may also be joystick-controlled.

KEYBOARD AND JOYSTICK CONTROL LAYOUT

Figure 1 shows the keyboard and joystick control layout. Submarine movement is controlled by using the throttle, rudder, and dive planes.

Throttle
The [+] and [-] keys step the throttle through the power settings of:

    ASTERN
    ALL STOP
    AHEAD 1/3
    AHEAD 2/3
    AHEAD FULL
    AHEAD FLANK

Rudder
The [F] and [H] keys step the rudder to the left and right. The [G] key centers the rudder. There are seven rudder settings:

    HARD LEFT
    FULL LEFT
    LEFT
    CENTERED
    RIGHT
    FULL RIGHT
    HARD RIGHT

The rudder control keys are centered around the [G] key and are based on finger positioning rather than key letter abbreviations.

TORPEDO LAUNCH (Forward Tubes 1-6)

TORPEDO LAUNCH (Aft Tubes 1-4)
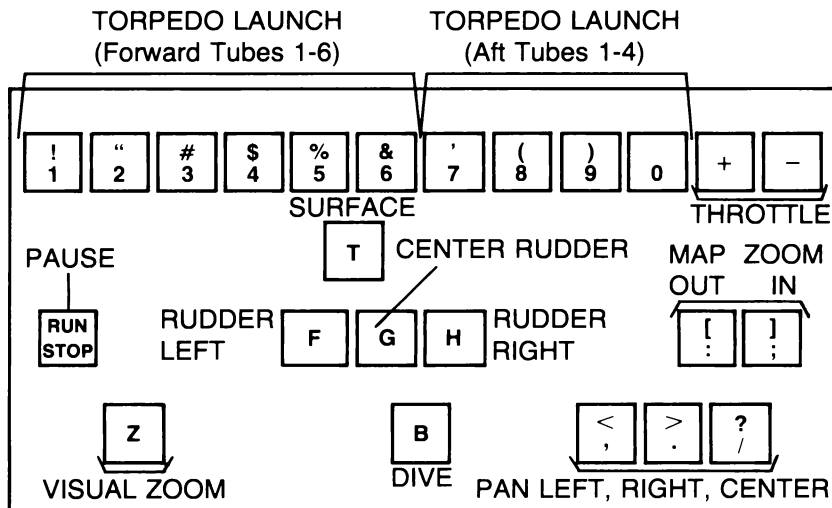
a) Primary movement and view controls

WINDOW CONTROLS
F1-Bridge or Periscope/Binocular
F2-Patrol Report
F3-Radar On/Off
F4-Damage Report
F5-Chart Display On/Off
F6-Big Chart
F7-Torpedo Data Computer On/Off
F8-End Game

MISC
P-Raise and Lower Periscope
Q-Time Scale (Quicker)
S-Time Scale (Slower)
A-Time Scale (Absolute) (normal)
D-Deck Gun
*-Debris & Fuel Release
Shift↑-Emergency Surface
E-Engine Diesel/Electrics

b) Other Keyboard Controls
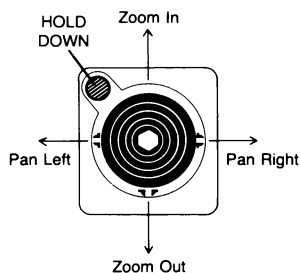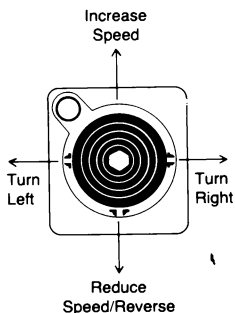
c) Joystick Control

Figure 1. Keyboard and Joystick Controls

Dive Planes

The [T] and [B] keys (centered around the [G] key) step the dive planes through three settings:

SURFACE - LEVEL - DIVE

Visual Controls

The bridge and periscope/binocular views can be zoomed and panned to view the ships and shoreline around the sub:

[<] = pan left   [>] = pan right
[/] = look straight ahead   [Z] = visual zoom

The pan controls change the view angle about 5 degrees per press. Holding down the [>] or [<] keys rapidly pans the view. Pressing [/] aligns the view with the sub's heading.

Joystick

A joystick plugged into Control Port 2 lets you control sub movement (left / right / ahead / astern) as well as pan and visual zoom. Make sure to hold the firebutton down to control pan and zoom (see Figure 1).

Pausing

Press [RUN/STOP] at any time to pause the simulation.

Other Keys

Function keys [F1] to [F8] switch between screens and systems as shown in Figure 1. Make sure to hold the [Shift] key down to select [F2], [F4], [F6], and [F8]. The miscellaneous keys shown in Figure 1 are self-explanatory and will be covered later.

IMPORTANT NOTE: Don't use the [Shift] key unless this manual specifically instructs you to do so. Keys such as [<] and [>] are assumed to be pressed without using the [Shift] key, even though they are shown as upper case on the keyboard.

MENU SELECTION TEXT AT SCREEN TOP

The text bar at the top of the screen tells which systems are active and which Function keys to press to turn on commonly used systems. Messages are also displayed in this area.

SUB MOVEMENT AND NAVIGATION

COURSE AND BEARING DIRECTIONS

Figure 2 shows the conventions of course direction (the direction the submarine is moving) and view direction or "Bearing". Bearing is shown at the top of the visual screen in periscope and bridge views.

MAIN INSTRUMENTS AND GAUGES PANEL

Figure 3 shows the main instruments display. This display contains all the important information needed to run, navigate, and fire weapons from the submarine.

Torpedo Status
This shows the condition of the bow and aft torpedo tubes. The left side of the indicator shows the four aft tubes. A filled box means the tube is loaded and ready for firing. A hollow box means the tube is empty, jammed, or not ready for firing.

The 2-digit display in the box at the top of the indicator tells how many torpedoes are left in aft storage. These are loaded into the aft tubes as needed.

The right side of the indicator shows the six bow torpedo tubes.

Time/Date and Time Scale
This section displays important information concerning the passage of time. The time indicator shows time passing in the current time scale. (see *Time Scale Factor and Time of Day* section for details).

Fuel Levels
These three bar gauges show levels of diesel fuel, battery capacity, and air remaining. Air supplies and batteries are recharged when you surface. You must go to port to get more fuel.
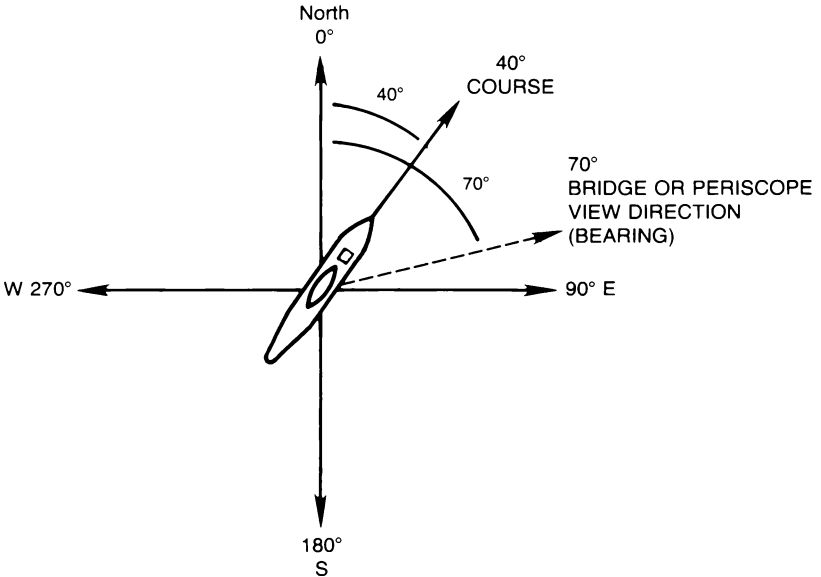
Figure 2. Course and View Directions
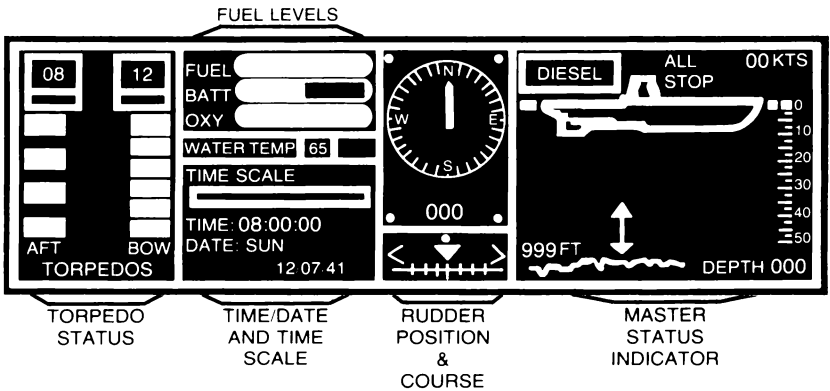
Figure 3. Main Instruments and Gauge Displays

Rudder Position and Course
The top of this gauge is a compass. A three-digit readout is positioned below the compass dial for an accurate reading.

The sliding pointer indicator at the bottom of this gauge shows the rudder position.

Master Status Indicator
This unique indicator displays the following information in graphic form:

1. Diesel or battery power being used.
2. Engine setting (ALL STOP, ASTERN, AHEAD FLANK, etc.)
3. Dive depth (the sub image moves up and down. Read the gauge on the right side or the digital depth readout.)
4. Depth under keel.
5. Speed in knots.
6. Dive/Level/Surface status (the sub image tilts).
7. Periscope up/down (a periscope comes out of the conning tower).
8. Periscope depth limit (the periscope is above or below the waterline).

STEERING THE SUBMARINE

The submarine is easy to control. High-level orders like those a commander would give are assigned specific keypresses (or joystick movements), and the complexities of carrying out these orders are handled automatically.

Forward and Astern Movement
The throttle steps through settings from ASTERN to AHEAD FLANK. Use the [+] key to increase forward speed, and use [-] to slow down and move astern. Read the engine setting above the submarine image on the master status indicator (Figure 3). Stop sub movement by selecting ALL STOP.

The joystick can be used instead of the [+] and [-] keys. Push forward to increase throttle one position, and pull back to decrease throttle.

This submarine uses diesel engines on the surface, and battery-powered electric motors below the surface. The appropriate motor or engines are selected automatically when you dive or surface. The current propulsion in use is shown on the master status indicator. In emergency situations you can override automatic selection and switch between DIESEL and ELECTRIC by pressing [E].

The submarine's speed is shown in the upper right corner of the master status indicator (Figure 3).

Turning
Turn the submarine by specifying right or left rudder. Rudder controls are positioned around the [G] key. Press [F] to give left rudder, [H] for right rudder, and [G] to center the rudder. There are three rudder positions in each direction. For left turns there are: LEFT, FULL LEFT, and HARD LEFT. Press the [F] or [H] keys multiple times to step through the settings. The rudder position indicator on the main instrument panel (Figure 3) shows rudder position.

The course indicator on the main instrument panel shows the direction the submarine is pointing in both analog and digital forms.

Diving and Surfacing
The dive planes are used to dive and surface. The dive plane controls are centered around the [G] key. Press [T] to raise the dive planes a position, and [B] to lower them a position. The dive planes have three positions: DIVE, LEVEL, and SURFACE.

The submarine image on the master status indicator tilts to show the three positions. Depth is indicated by the submarine image position on the status indicator as well as by the digital depth readout.

BRIDGE VIEW

While surfaced, you can look out over the sea from the top of the conning tower. This is called "bridge view". The shoreline, waves, and other ships are visible. There are two levels of zoom for this view. Press [Z] to switch between Near and Far views.

Bridge view is usually displayed as a full-screenwidth display above the main instrument display. When other features are selected (radar

or chart view, for instance) the bridge view shrinks to occupy the left half of the screen. This lets you view the chart and bridge view simultaneously.

A three-digit heading is presented at the top center of the bridge view. This is the angle you are looking (your Bearing). This angle is relative to North, so if you are looking East your bearing would be 90 degrees.

The [F1] key toggles between bridge view and periscope/binoculars view.

If you are submerged and select bridge view, the view will be blanked out with blue or black to indicate that you are under water and cannot use the bridge.

CHART DISPLAY

Press [F5] to turn on the chart display. A chart of the area you are sailing through appears in the right half of the bridge-view area above the instrument display. The submarine's position is shown at the center of the chart. Other ships appear as dots on the chart with trails showing their direction of movement.

Press the "[" and "]" keys (don't press [Shift]) to zoom in and out on the chart view. Press [F5] again to turn the chart display off.

TIME SCALE FACTOR AND TIME OF DAY

Sailing a submarine long distances across the Pacific took days. A time scale factor system is included to speed-up time and reduce days to minutes in order to keep simulation time to a reasonable length.

The time/date and time scale indicators on the main instrument panel (Figure 3) show the current day, date, and time. The time clock advances at the current time scale rate. The TIME SCALE bar gauge

and digital indicator show what time scale is selected. The following keys control time scale:

[A]	-	Absolute Time	Time passes at real time rate.
[Q]	-	Quicker	Increase time passage rate.
[S]	-	Slower	Decrease time passage rate.

Six time scales are available: 1X (real time), 2X, 4X, 8X, 16X, 32X. At 32X a submarine moving at 20 knots has an apparent speed of 640 knots, so great distances can be covered in short time periods.

BIG CHART NAVIGATION

The chart system and 32X scale factor are adequate for local areas, but for ocean crossings and long distance patrols a larger chart and faster time scales are needed. The BIG CHART serves this purpose. Press [F6] to turn on the big chart. Select one of the four geographic areas by pressing the appropriate key ([1], [2], [3], or [4]) as shown in Figure 4. The chart for the selected area will be displayed.

An "X" on the chart indicates your position. Use the keyboard or joystick (see Figure 4) to move the X to where you want to go. The transit time indicator at the top of the screen tells how long it will take to get there. If you place the X near an enemy convoy, the screen border will change to red and you will hear explosions. If you sail to this area you will encounter enemy ships.

When the X is in position, press the joystick button or the [X] key to begin the trip. The transit time indicator shows time going by (very rapidly) as the submarine moves across the chart. The screen border changes color to note the passage of day and night.

When you reach your destination you can sail on the big chart again or exit by pressing [C].

| F6 | ENTER | | C | EXIT |

SELECT CHART SECTION

1-NORTH PACIFIC THEATRE	2-HAWAII
3-SOUTH PACIFIC THEATRE	4-NEW LONDON

PATROL DAYS LEFT 12   TRANSIT TIME 1.8

NORTH

X ◄───────── DESTINATION POINTER "X"

JOYSTICK CONTROL

MOVE NORTH

PRESS TO BEGIN TRANSIT

MOVE WEST

MOVE EAST

MOVE SOUTH

KEYBOARD CONTROL

MOVE NORTH

T

MOVE WEST

F G H

MOVE EAST

X C B

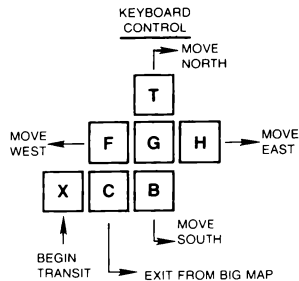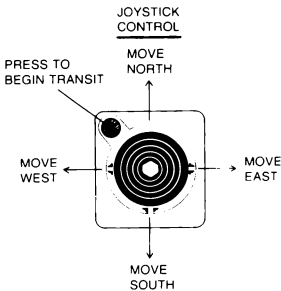MOVE SOUTH

BEGIN TRANSIT

EXIT FROM BIG MAP

Figure 4. Big Chart

ORDNANCE AND WEAPON CONTROL

PERISCOPE/BINOCULARS VIEW

The periscope is used to view objects on the surface while submerged and to aim and fire torpedoes. Binoculars are used for aiming to fire torpedoes when on the surface. Press [F1] to switch between bridge and periscope/binoculars view. The proper aiming device (periscope or binoculars) will be chosen depending on whether you are submerged or on the surface. Periscope view is only available down to 50 feet.

Press [P] to raise and lower the periscope. Periscope status is shown on the master status indicator (see Figure 3) as a periscope symbol on the conning tower of the submarine image. It's a good idea to keep the periscope down if you are submerged and not using it because a periscope above water is easily spotted by enemy ships.

Your Bearing (direction relative from North that you are looking) is shown at the top center of the periscope/binoculars view. Cross-hairs and tick marks for aiming torpedoes are also shown.

AIMING AND FIRING TORPEDOES

Press keys [1] to [6] to fire the six forward torpedo tubes, and [7] to [0] to launch the stern four. Torpedo status indicators (Figure 3) show which tubes are full. The number in the status box above the tubes shows how many torpedoes are left in storage. They are automatically loaded into the tubes if any tubes are empty.

There are two ways to aim the torpedoes - by eye, or by using the Torpedo Data Computer. To aim by eye, go to periscope/binoculars view and pan until you get the ship sighted in your cross-hairs. When you fire a torpedo (forward or aft - it doesn't matter), the torpedo will take a straight course from the periscope's bearing.

The problem with aiming by eye is that compensating for submarine and ship movements is pure guesswork. The best way to get accurate hits on a moving target is to use the Torpedo Data Computer.

TORPEDO DATA COMPUTER

The Torpedo Data Computer (TDC) is a device that computes a torpedo launch course (gyro angle) based on target information. This is basically an analog computer that uses information submitted at two or more time intervals (marks) to triangulate the target ship's position and movement. Figure 5 shows the Torpedo Data Computer screen. See the *"Submarine Action in the Pacific"* manual for technical details.

Up Periscope!'s TDC is turned on and off by pressing [F7] and appears as a control panel at the right of the screen. The Features Menu presented at the beginning of the game lets you select MANUAL or AUTO for the Torpedo Data Computer. The auto/manual selector at the top of the TDC tells which mode is currently active.

Automatic Mode
In automatic mode you simply line the periscope cross-hairs up with the ship you want to fire upon. The status message indicates either LOCKED ON TARGET or OUT OF RANGE. Information about the target also appears on the TDC. Once locked on target, the torpedo's course is computed and you can fire a torpedo. Firing when this indicator is on sets the torpedo on a good course to hit the ship (barring any evasive maneuvers that the ship might perform).

Manual Mode
This is the realistic mode. You must submit multiple "marks" to the computer. The computer will compute the course, set the torpedo direction and respond with LOCKED ON TARGET. The torpedo can then be fired.

The SEQUENCE readout on the TDC (see Figure 5) guides you through the mark-submitting sequence:

1. Turn on the TDC by pressing [F7].
2. Select the target range-finding method by pressing [X] until the proper method (sonar, radar, or stadimeter) appears on the TDC.
3. Get the target lined up with the periscope/binocular's cross-hairs.
4. Press [M] to take the first mark. The elapsed time meter will start running.

RIGHT SIDE OF VISUAL SCREEN

MANUAL/AUTO
SELECTED
ON
FEATURES
MENU

TORP. DATA COMPUTER

AUTO ▨ MANUAL ☐

SEQUENCE

FIRE TORPEDO

MESSAGES TELL
WHAT TO DO NEXT

STATUS

LOCKED ON TARGET

TARGET STATUS
(Weapon in range,
locked on target,
Course changed)

ELAPSED TIME - 1:28
RANGING (X) - SONAR

TARGET

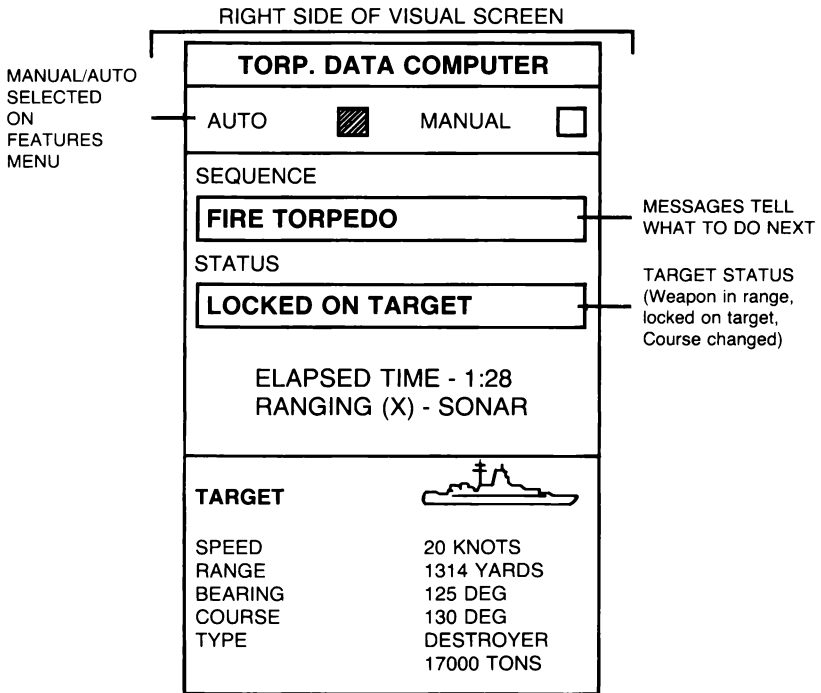|	
SPEED	20 KNOTS
RANGE	1314 YARDS
BEARING	125 DEG
COURSE	130 DEG
TYPE	DESTROYER
	17000 TONS

Figure 5. Torpedo Data Computer

5. Wait for about one minute of elapsed time and take a second mark by pressing [M]. In difficult, advanced rank modes, you should take a third and even a fourth mark after a few minutes to increase accuracy.
6. When the status display indicates LOCKED ON TARGET, you can fire a torpedo or wait awhile and press [M] again to take a third mark for even greater accuracy.

Although this may seem like a long and complex procedure, it really isn't. The sequence indicator will tell you what to do next.

Resetting the TDC
The TDC must be used repeatedly when firing at many ships. The following sequence resets the TDC for another computation:

1. Exit and enter the TDC again [F7] [F7].
2. Press the [R] key.
3. Fire a torpedo.

Firing a Spread of Torpedoes
Captains often fired a "spread" of torpedoes to increase their chances of hitting an important target. Typically, three torpedoes were fired: one slightly to the left, one on target, and one slightly to the right of the target. To fire a spread:

1. Use the TDC to lock onto the target. Remember the bearing shown in the periscope view.
2. Fire a torpedo toward the target.
3. Pan slightly to the left of the target bearing and fire a second torpedo.
4. Pan slightly to the right of the target bearing and fire a third torpedo.

Remember that once the TDC indicates LOCKED ON TARGET, you can launch torpedoes to the right or left of the computed course by panning slightly to the right or left.

Selecting Ranging Method
Range to target is an important piece of information used by the TDC. Each time you "mark", the range to target is computed. Range is determined by using either radar, sonar, or stadimeter (an optical, split-image rangefinder]. Choose between methods by pressing [X].

The method currently in use is shown on the TDC panel. When selecting a ranging method, keep these facts in mind:

1. Sonar tends to give your presence and location away.
2. Radar is unusable when submerged.
3. The stadimeter is affected by limited visibility and darkness.

Taking Multiple Marks
A minimum of two marks are required, but you can improve aiming accuracy by taking three or four marks at longer intervals (two to three minutes indicated). This is particularly important in difficult (advanced rank] modes.

When you finish using the TDC, press [F7] to turn it off and return to full bridge or periscope view.

RADAR SCREEN

The radar system can be used while surfaced to spot ships at a great distance. Press [F3] to turn the radar system on. Enemy ships appear as dots on the screen. The scope has a range of twenty miles.

Press [F3] to turn the radar system off and return to full bridge or periscope view.

SONAR

Active and passive sonar are available. When you are approaching enemy ships, the characteristic "pong" sound of their sonar searching for you will be heard, and a crewman's message will appear at the top of the screen to indicate a passive sonar contact.

Active sonar is used with the Torpedo Data Computer to accurately determine the range of a target (see the *Torpedo Data Computer* section). Using active sonar gives your position away to the enemy, so use it only when needed.

STATUS REPORTS AND AUXILIARY SYSTEMS

PATROL REPORT

The patrol report keeps track of the total number of ships and tonnage sunk. Ship types and the nationality of recently sunk ships are listed. The submarine commander's rank status is also displayed.

Press [F2] to read the patrol report. Press [C] to exit back to the program.

DAMAGE REPORT

This report shows the status of submarine systems. Items followed by their status (OK, time needed to repair, or port repair required) are listed.

Press [F4] to read the damage report. Press [C] to exit back to the program.

SOUNDS TO LISTEN FOR

1. **Diesel Engine** - a low, rough engine sound.
2. **Electric Motors** - a low, smooth hum.
3. **Torpedo Launch** - a loud hiss during launch, and fading propeller sound as the torpedo moves away from the sub.
4. **Sonar Contact** - pinging.
5. **Hull Creaking** - a creaking sound when the submarine dives too deep.
6. **Dive Klaxon** - warning sound emitted before dive begins.
7. **Gun Shots** - indicates that destroyers are firing on you.
8. **Distant Explosions** - your torpedoes exploding.
9. **Collision Sound** - a "crunching" sound caused by the enemy ramming your submarine.
10. **Alarm Sound** - a repeating beeping sound indicating that damage has been sustained (go to damage report to determine the damage).

11. **Explosions in Big Chart Mode** - indicates that you are near an enemy convoy.
12. **Nearby Explosions when Submerged** - enemy depth charges.

DEBRIS AND FUEL RELEASE

You can sometimes trick the enemy into believing that the submarine has been destroyed by diving deep and releasing some debris and fuel. Release debris and fuel by pressing the [*] key. Notice that the fuel gauge drops a bit when you do this.

EMERGENCY SURFACING

When you are submerged, badly damaged, and the dive planes have little or no effect, you can "emergency surface" by pressing the [Shift] and [up arrow] keys simultaneously. You can only do this once per mission. A port call is required to recharge the emergency surface equipment.

ENDING THE GAME

A game ends when you are sunk, when you save a continuing successful mission to disk, or when you press the [F8] key. When the game ends, a series of menus and reports tell you your final score and let you save your game if you wish.

AWARDS CEREMONY

When you finish a game, the award ceremony report appears. This displays the total tonnage and number of ships sunk. If you have a promotion coming, it will be awarded to you at this time.

SAVING THE GAME TO CONTINUE LATER

The war in the Pacific wasn't won in a day. Submariners had to work day after day to carry out their strategy. You may wish to do the same. You can save a game in progress by using the following procedure:

1. Select the SAVE GAME TO DISK option on the End of Game Menu.

2. Remove the Up Periscope! disk and insert a disk that you want to save the game to into the disk drive. This can be a blank or already-used disk, but don't use the Up Periscope! disk.

3. Follow the menu instructions on when to remove the disk and re-insert the Up Periscope! disk.

GOING ON MISSIONS

SKILL LEVELS AND SCORING

Skill level depends on the scenario chosen and your current rank. The startup menus let you choose a starting level of difficulty, and promotions based on performance increase game difficulty.

Scoring is based on three items: number of ships and tonnage sunk, rank advancement, and special awards won. The awards ceremony summarizes your progress on these three items, and the patrol report keeps track of ships sunk, tonnage, and your progress toward a promotion (or demotion).

GAME-AT-A-TIME ACTIONS

For short games, choose one of the HISTORICAL SITUATION or REFRESHER TRAINING selections. These selections let you fight short, stand-alone battles.

For a medium-length game, select a PACIFIC PATROL or TRANSIT option.

WHERE TO GO FROM HERE

This handbook describes how to use the submarine and its systems. Additional information about submarine tactics is required to successfully fight the enemy. The *"Submarine Action in the Pacific"* manual covers submarine history, equipment, and tactics. It also contains charts and information about historical situations and famous patrols.

At this point it might be best to try some refresher training and historic situations. Once you get the "feel" of the submarine, consult the *"Submarine Action in the Pacific"* manual to sharpen your skills and learn real submarine tactics.