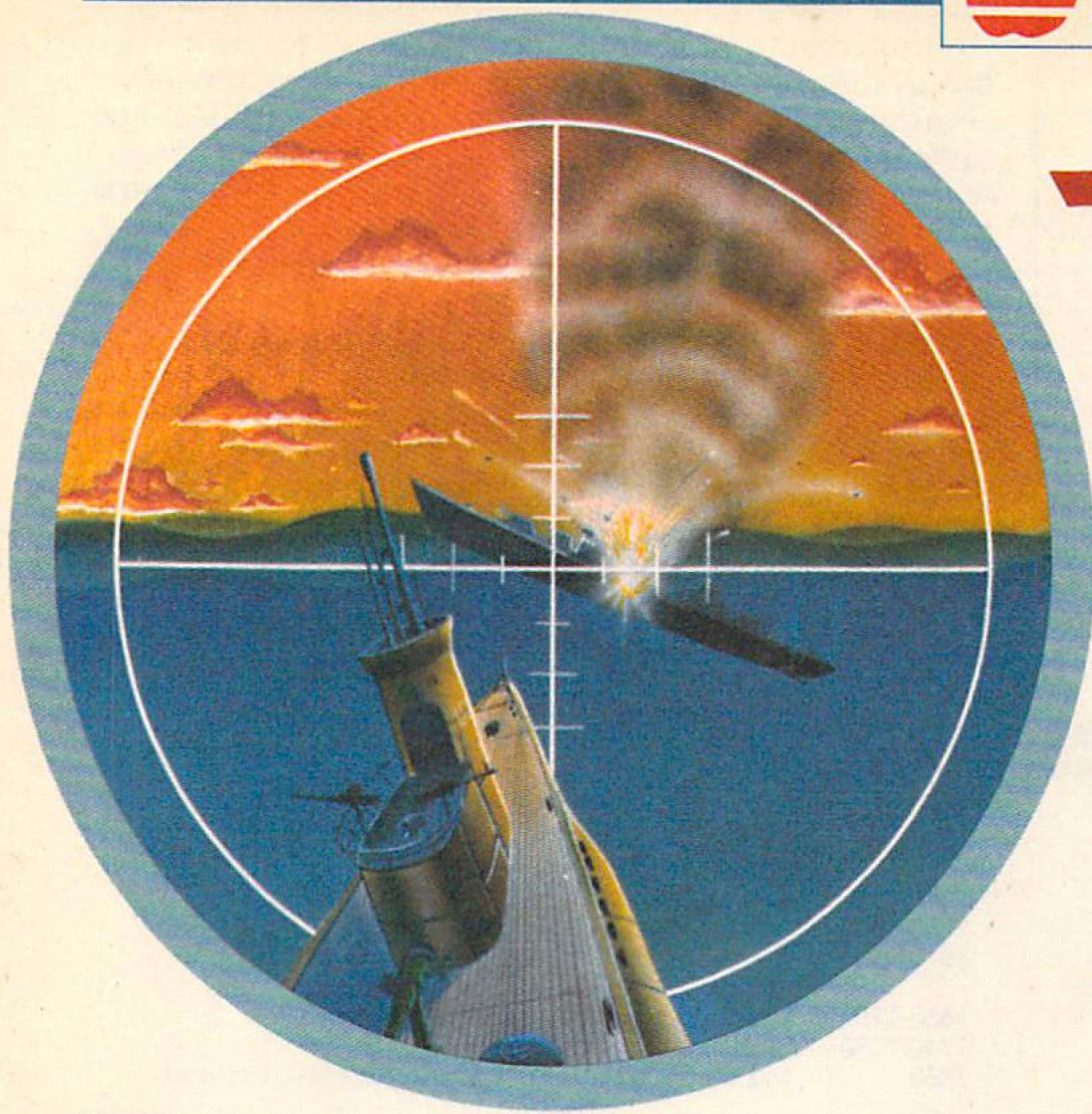
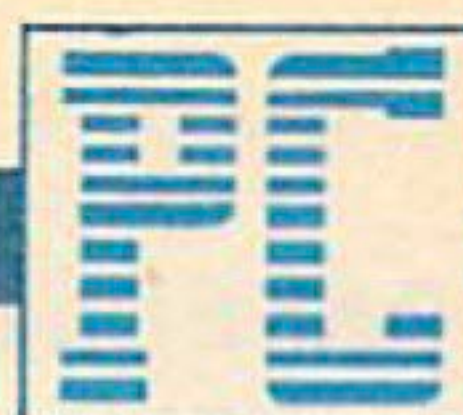




TORPEDO ALLEY

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War has traveled to the far reaches of the Earth—even to the depths of the sea. How long will you survive in this underwater game of cat and mouse?

From deep in the tumbling sea, your submarine rises to peek above the surface. A single warship enters from the edge of your viewing field. As it approaches the vertical crosshair at the center of your scope, you issue the order: *Fire Torpedo!* You see the wake of the first shot climb along the center line, diminishing in the distance as it nears its deadly rendezvous. Finally, a flash of flame and following thunder announce the demise of yet another enemy vessel. But the next ship to appear zig-zags around your second torpedo, and swings around on a collision course as its guns pump out deadly salvos and depth charges are made ready. There's no time to waste—*Dive! Dive!*

Torpedo Alley is a game of timing and wits. The object of the game is to sink as many enemy ships as you can with your limited supply of torpedoes. But watch out—the enemy can shoot back. Fortunately, at any time you may submerge and take evasive actions.

But submerging has its drawbacks as well. Your sub is not fast when fully submerged, and the enemy ship drops depth charges. You must try and maneuver your sub around the charges or you will be blown-up. If you survive the depth charges, you can resurface and take another stab at the ships with your torpedoes.

Fire Away

Start the game by deciding whether to use joysticks. If you do use joysticks, the following actions will result:

Main Screen - Up Periscope
Left—Move sub to the left.
Right—Move sub to the right.
Down—Dive; down periscope.
Fire button—Fire torpedo.

Second Screen - Submerged
Left—Move left.
Right—Move right.
Down—Move down.
Up—Move up.

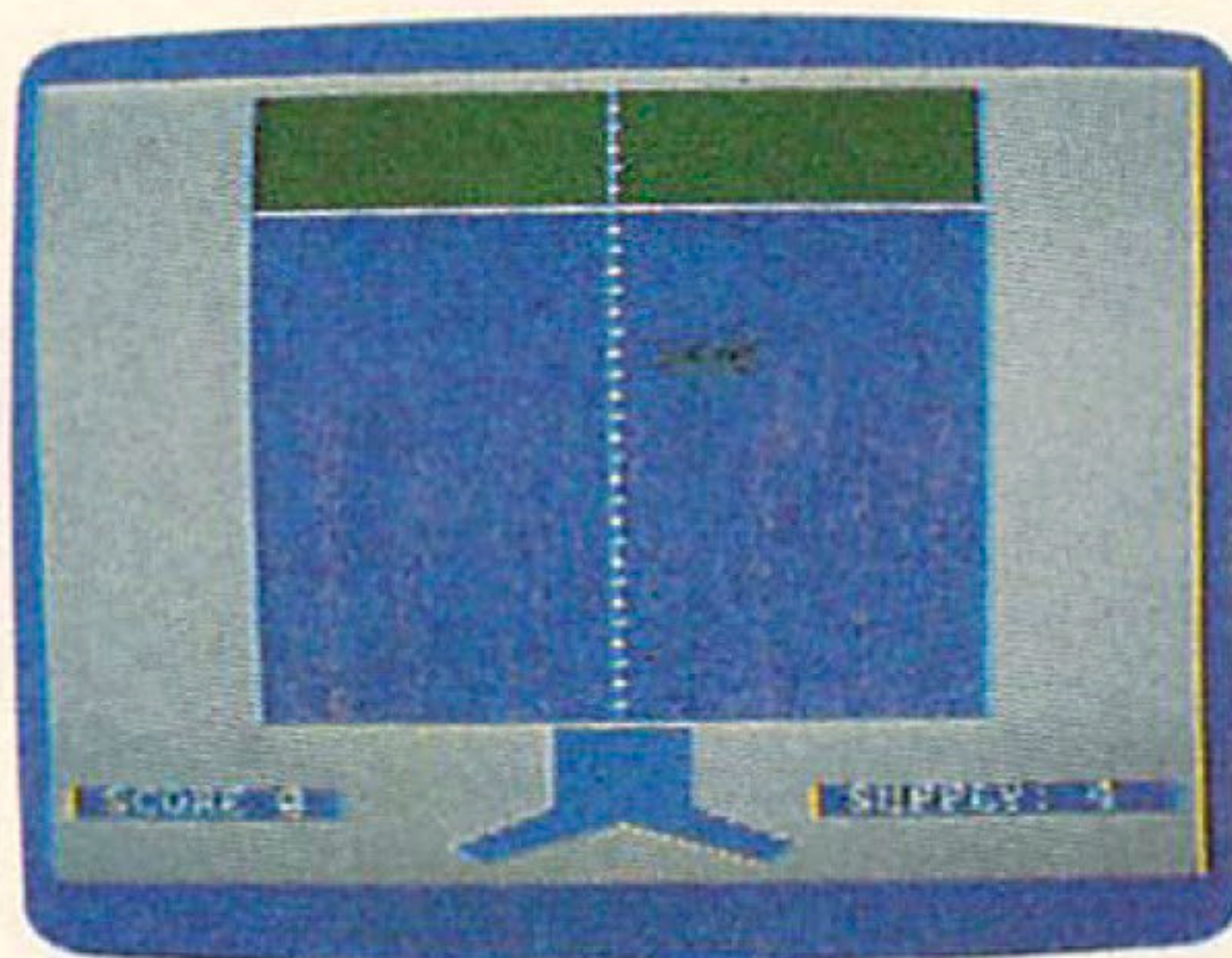
If you select the keyboard option, you can consult your machine's Control Capsule for the proper movement control keys.

After you select the joystick or the keyboard, the screen will clear and the main game screen will appear. This screen displays the view of enemy waters as seen through your periscope. Occasionally, an enemy vessel will cross your path. You must try to judge the precise time to fire your torpedo, based on the ship's distance, and its direction of travel. The destroyers are aware that you are in the area, so most of them will be navigating a zig-zag pattern. This makes them a more difficult target because distance is harder to judge.

The enemy ships will fire at your sub if you allow them to pass beyond the center of your periscope. You can turn your sub either left or right to try and line up the ship by using either the keyboard controls or the joystick. If you are unable to get off a good shot before the enemy ship reaches the other side of your periscope, your only hope of avoiding a hit from its main armament is to dive.

When you dive, the screen will redraw, showing your sub diving below the surface of the water. A ship will then start traversing the top, dropping depth charges. Resurfacing after out-maneuvering all of the depth charges is automatic; at this point, you needn't do anything. After you surface, the main screen will display again, and you will be ready to fire your torpedoes at the next ship.

Every time you are hit by the main armament from the enemy's ships, some of your torpedoes become damaged, lowering your supply. When your supply of torpedoes reaches zero, or when you are destroyed by depth charges, the game is over. Your score and percentage of hits versus shots taken will be displayed. You will then be given a chance to play another game.



Screen photo taken from
C-64 version.



CONTROL CAPSULE Torpedo Alley

KEY	FUNCTION
<i>Surface Mode:</i>	
J	Move periscope left.
K	Move periscope right.
M	Dive.
[Space bar]	Fire torpedo.
<i>Submerge Mode:</i>	
I	Move sub up.
J	Move sub right.
K	Move sub left.
M	Move sub down.

The secret to good animation on the Apple computer lies in the use of the XDRAW command. Like the DRAW command, XDRAW places shapes defined with a shape table onto the high-resolution graphics screen. XDRAW will reverse the color of the screen wherever the shape table indicates that a pixel should be plotted. By XDRAWing at the same location twice, you in effect erase the shape drawn by the first XDRAW. This method leaves the contents of the screen undisturbed after the shape is erased, making animation possible.

One drawback to this method of animation is that, if not done properly, the shape you are drawing can flicker—an undesirable effect when doing animation. This problem can be improved by remembering the last position of the shape and erasing it just before drawing the shape at its new location.

Torpedo Alley (Apple II Family) Explanation of the Program

Line Nos.		Line Nos.	
100-210	Program header.	850-990	Move the torpedo when fired.
220-380	Initialize program variables.	1000-1040	Hit the ship with a torpedo.
390-410	Load shape table and sound routine.	1050-1140	End of the game. Option to play again.
420-490	Display periscope control room.	1150-1560	Submerged game routine; part 2.
500-540	Main control loop for the periscope; part 1 of game.	1570-1650	Ship fires and hits your sub. Lose supply of torpedoes.
550-580	Place a ship in the periscope.	1660-1750	Sound-effects routines.
590-720	Scan keyboard and joystick.	1760-1850	Shape-table data.
730-840	Move the ship in the periscope.	1860	Machine-language routine for sound effects.

For your key-in listings, see HCM PROGRAM LISTINGS Contents.



CONTROL CAPSULE Torpedo Alley

KEY	FUNCTION
<i>Surface Mode:</i>	
S	Move periscope left.
D	Move periscope right.
X	Dive.
[Space bar]	Fire torpedo.
<i>Submerge Mode:</i>	
E	Move sub up.
S	Move sub right.
D	Move sub left.
X	Move sub down.

The Commodore 64 is capable of producing very good animation with the use of sprites. Sprites are movable objects which can pass behind or in front of screen character graphics. These sprites, however, are not able to move on their own. You must track each sprite and POKE its new location into memory. This method has its good and bad points. The fact that you have to move each sprite manually can really start to eat up processor time if you are moving very fast or are moving more than one object. On the plus side, however, you always know exactly where each sprite is—no guesswork is involved. You may see the game slow down a bit when more than one sprite is moving on the screen, such as when the ship is dropping depth charges on your sub.

Torpedo Alley (C-64) Explanation of the Program

Line Nos.		Line Nos.	
100-200	Program header.	1670-1800	Dive routine.
210-300	Title screen.	1810-2060	Main control loop for submerged portion of game.
310-430	Initialization.	2070-2090	Explode depth charge.
440-980	Display playing screen.	2100-2120	Hit by depth charge.
990-1030	Main control loop.	2130-2260	Surfacing routines.
1040-1110	Start and move the ship.	2270-2280	Select an island shape for display.
1120-1250	Scan keyboard and joystick.	2290-2360	End of game. Option to play again.
1260-1380	Move islands across screen.	2370-2380	Move-cursor routine.
1390-1460	Ship shoots back.	2390-3110	Sprite shape data.
1470-1540	Fire torpedo at ship.	3120-3160	Sound data.
1550-1610	Check for a hit.		
1620-1660	Ship hit by a torpedo.		

For your key-in listings, see HCM PROGRAM LISTINGS Contents.

CONTROL CAPSULE *Torpedo Alley*

KEY	FUNCTION
<i>Surface Mode:</i>	
Left arrow	Move periscope left.
Right arrow	Move periscope right.
[ENTER]	Dive.
[Space bar]	Fire torpedo.
<i>Submerge Mode:</i>	
Up arrow	Move sub up.
Right arrow	Move sub right.
Left arrow	Move sub left.
Down arrow	Move sub down.

The IBM PC and PCjr have a number of graphics-drawing commands which are used in games requiring a lot of animation. The DRAW command is capable of creating intricate designs on the screen with a minimum of overhead. (For complex animation though, this command has its limitations.) Once a shape is drawn with this command, you can store the shape in an array using the GET command. With the shape in an array, you can easily put it back on the screen anywhere you like with the PUT command. The default mode of the PUT command is XOR. This option will cause the shape to inverse the color of any pixel on the screen that comes in contact with a pixel in the shape. This allows the program to erase the shape by simply drawing at the same location again.

Torpedo Alley (IBM PC & IBM PCjr) Explanation of the Program

Line Nos.		Line Nos.	
100-220	Program header.	570-620	End-of-game routine.
230-320	Initialize program graphics and variables.	630-670	Scan keyboard.
330-370	Set up for start of a new game.	680-890	Submerged game routine.
380-420	Draw the periscope control room.	900-980	Move the islands and adjust ships speed.
430-470	Main control loop for periscope.	990-1120	Fire and move the torpedo.
480-510	Ship hit by torpedo.	1130-1200	Move ship through periscope.
520-560	Ship fires back and hits you.	1210-1250	Input routine and score-display routine.

For your key-in listings, see HCM PROGRAM LISTINGS Contents.

CONTROL CAPSULE *Torpedo Alley*

KEY	FUNCTION
<i>Surface Mode:</i>	
S	Move periscope left.
D	Move periscope right.
[ENTER]	Dive.
[Space bar]	Fire torpedo.
<i>Submerge Mode:</i>	
E	Move sub up.
S	Move sub right.
D	Move sub left.
X	Move sub down.

Animation on the TI-99/4A is easy with the use of sprites. With their automatic motion, you can have the program set them off on a course while it works on other tasks. You can even change the shape of a sprite while it's in mid-motion—this is how this program simulates the torpedo and its trail of white water getting smaller as it moves farther away. A loop which starts in line 660 reads the shapes from a DATA statement as they are needed. Because the sprites get their shape from redefining the shapes of normal characters, the CHAR command is called. This method is not as fast as first defining all of the shapes needed, and then reassigning a different character to the sprite. However, when a large number of graphics characters are required for either the animation or other parts of the program, this is the only method available.

Torpedo Alley (TI-99/4A) Explanation of the Program

Line Nos.		Line Nos.	
100-190	Program header.	930-960	Main control routine—part 2.
200-260	Display title & option screen.	970-1020	Move sub on screen 2.
270-380	Display the main playing screen.	1030-1130	Update depth charges.
390-410	Main control routine—part 1.	1140-1200	Sub surfacing routine.
420-440	Place a ship in the periscope.	1210-1280	Ship shoots back at you.
450-500	Scan for input.	1290-1480	Program data for graphics.
510-600	Check ship and island position.	1490-1510	Explosion sound effects.
610-730	Fire torpedo at the ship.	1520-1550	Update ships motion.
740-800	End-of-game routine.	1560-1570	Subroutine to create the sonar sound.
810-860	Select one of four island shapes.		
870-920	Dive routine. Submerge below water.		

 *Torpedo Alley* requires TI Extended BASIC.

For your key-in listings, see HCM PROGRAM LISTINGS Contents.

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