

Submarine Control Keys

I have not edited out some of the non-functioning keys yet, so pressing any other key than those listed may have unexpected results. The terrain mesh subroutine is still a bit squirrely. It may erase part of itself during a redraw. If this happens, you will see mostly a blank box. It often draws correctly the next time, if the sub changes position enough. Otherwise, try adjusting the magnification (use the terrain avoidance setting for this). This often solves the problem.

Get some practice at controlling the submarine itself: changing speed, direction, dive rate. While moving forward, try adjusting the pitch angle while keeping the same depth using just the dive planes; try using the ballast control and dive planes to move the submarine forward and backward without using the engines. Mastering skills like this get you to develop a really good feel for how the machine works.

Get some practice at locating and approaching the other noise sources in the environment. Some move, some don't. Some react to you, some ignore you. Try to get close to them, but remember that some can affect your submarine and not all of them are friendly.

Engine Controls

+ right & left engines +1%
- right & left engines -1%
<enter> right & left engines to 100% (either forward or reverse depending on current setting)
<backspace> all engines to 0%

Individual Engine Control

Function	Left Engine	Center (vertical) Engine	Right Engine
+ 1%	F1	F5	F9
zero	F2	F6	F10
- 1%	F3	F7	F11
forward/reverse	F4	F8	F12

Control Surfaces

up arrow	bow planes -1°	stern planes +1°
down arrow	bow planes +1°	stern planes -1°
Home	bow planes -1°	
PgUp	stern planes -1°	
End	bow planes +1°	
PgDn	stern planes +1°	
Del	bow and stern planes to zero	
left arrow	rudder left (-) 1°	
right arrow	rudder right (+) 1°	
Ins	rudder to zero (center)	

Trim Ballast

Function	Forward Trim Tank	Aft Trim Tank
reduce ballast (press again to increase rate)	1	2
stop change to ballast	3	4
add ballast (press again to increase rate)	5	5

Other Controls

Terrain Avoidance Sonar (must have fathmometer on) (also controls terrain mesh magnification)

[-1%
]	+1%
s	passive targeting sonar on/off
c	increase time scale of waterfall display
v	decrease time scale of waterfall display
,<	shift waterfall display targeting cursor left 1°
.>	shift waterfall display targeting cursor right 1°
a	active sonar on/off
	dot colour: red = at your depth
	yellow = above your depth (dark yellow in next thermal layer up)
	green = below your depth (dark green in next thermal layer down)
	white = at the surface
	purple = on the bottom
*	toggle speed display between total vector and horizontal component only
f	fathmometer (ocean-floor depth finder) on/off
TAB	cycles between current active sonar contacts
	(purple tick marks on the side of the map show which target is selected)
q	shifts vertical position display up
w	shifts vertical position display down
<space>	time acceleration
=	save situation file
x	pause

Map Display

m	redraw map
z	toggle between full view and magnified view
i	increase magnification
j	decrease magnification
k	toggle between low magnification and high magnification
/	plot target bearing onto map
o	draw terrain mesh

Passive Sonar Waterfall Display

Noise shows as a random pattern of dots. The brighter the dot, the louder the noise.

Noise increases with the speed of the submarine through the water.

Discrete continuous noise sources show up as a vertical line.

A green cursor at the top of the waterfall display can be moved to mark the direction to any noise source on the display. Pressing “/” will draw a line on the map display from the current position along this direction. The yellow cursor shows the submarines current heading.

A tick mark along the right side of the display marks 10 s intervals.

The time scale can be compressed (the display is refreshed less often) or expanded.

Attitude Display

- 1) compass heading
- 2) vertical velocity vector
(vertical direction in which the submarine actually is moving)
- 3) pitch (angle of submarine's fore-aft axis to the horizontal plane)
- 4) bow control plane angle
- 5) stern control plane angle

