



688 ATTACK SUB



SURVIVAL GUIDE



TABLE OF CONTENTS

Advanced Hunter/Killer Tactics	1
Staying Silent	1
Sighting the Enemy	2
Tracking the Enemy	3
Evasive Maneuvers	4
Mission Reports	6
TORPEX '89	7
Shake 'Em	12
Sub Ops	16
Mumar Cadaver	18
Escape	22
Goulash	27
Catwalk	31
Surprise Party	35
Homecoming	42
Hit and Run	47



In submarine combat, stealth is everything. The name of the game is: discover the enemy before he discovers you. This involves staying silent while searching for targets, stalking them, and launching your attack. This Survival Guide teaches you advanced hunter/killer tactics that will help you outmaneuver your opponents and increase your chances of returning to port. Study the tactics carefully, then turn to the Mission Reports to see how they've been put to use by other submarine commanders. The Mission Reports section also include important hints, maps, and sonar signatures that give you the winning edge over your opponents.



ADVANCED HUNTER/KILLER TACTICS

STAYING SILENT

Increasing and Decreasing Speed — Not only is your submarine noisier at higher engine settings, but the *rate* at which you accelerate makes your submarine more audible to enemy ears. The greater the acceleration demanded, the louder you are. For instance, you'll produce a lot more noise going from **1/3** to **FULL** than you would going from **1/3** to **2/3**. When you're trying to stay quiet, you should increase speed *gradually* — for instance, if you're going to **STD** speed from a complete standstill, set your speed on **1/3**, wait for the submarine to accelerate to 8.4 kts, then set your speed on **2/3**, etc., until you reach **STD** speed.

Do just the opposite when decreasing speed — decrease your throttle regardless of the engine settings in between. When evading the enemy or his torpedoes, a good trick is to completely cut your engines and coast. Your engines produce a good deal of the noise the enemy is using to track you. When you cut your engines, your opponent immediately loses contact on you and you move as silently as possible.

Sprint and Drift — A submarine is considerably faster than many other ships in the water, but the price paid in noisiness and reduced listening capabilities usually prohibits the submarine captain from making his attacks at full speed. For this reason, you'll want to travel low and fast to an area, then cut your engines and drift — perhaps climbing to target "skimmers," or surface ships. Once you're very close to your target, you generally won't want to set your engine speed any higher than **50%** to **2/3** while making an attack run — and then only after dropping below a thermal layer.

SIGHTING THE ENEMY

Clearing the Baffles — Your baffles are the "blind" spot behind your sub. Since your sub's strongest sensors are located at the bow, you have the best chances of spotting an object if your nose is pointed at it. When seeking targets, rotate 180° every now and then and wait a few moments before turning back around. If there's something in the water near your depth, there's a good chance you'll get at least a contact (**X**). On long treks, you should periodically turn to see if anything is following you. Remember, your baffles



severely limit what you hear in back — if something is directly behind you, your chances of detecting it are very low.

Using the Sonar Analyzer — The captain that knows the sonar signatures of all the ships in the water has a distinct advantage over his opponents. You don't need to take the time to determine what kind of submarine or ship you're facing or risk pinging in order to get positive identification. You can analyze a contact even if you don't have a fix on it (that is, when the contact appears as an **X** on your display). The signatures of submarines and ships can be found in the *Mission Reports* section.

Estimating Range With Change in Bearing — If you don't have a fix on a target, its change in bearing can give you a rough idea how far away the target is. If the target's bearing is quickly changing, the target is nearby. If the target's bearing is relatively constant, the target is farther away. The only time this isn't true is when you and your opponent are pointed at each other or headed in the same direction (in which case your bearing is 000°).

Take a look at the figure below. In the first half of the diagram, the ship's bearing changes only slightly because of its long range. The second half shows the same ship (traveling at the same speed) at a closer range. Its bearing will change at a faster rate because of its close proximity.

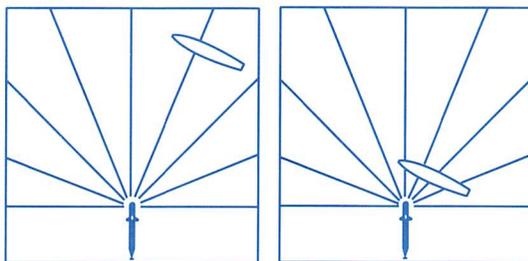


FIGURE 1: BEARING CHANGES FASTER AT CLOSER RANGE

TRACKING THE ENEMY

Using Torpedoes to Track — In a close duel, it is hard to keep track of an enemy submarine when it's thrashing wildly about. One way to track a submarine is to launch a torpedo at it, then target the *torpedo* to watch where it goes. As long as the torpedo doesn't ping and maintains a relatively steady speed, you know it has the submarine in sight. Watch the torpedo to see if your opponent is heading for a new thermal. You can



track the torpedo as it follows the submarine's depth and course. Since you only draw attention to yourself when you initially fire the torpedo, this method can be better than repeatedly using your active sonar. This may also force the opponent to turn his back on you. Needless to say, you shouldn't do this if there are friendlies in the area — an active torpedo doesn't discriminate between friends and foes.

Against surface ships, you can fire weapons from low depths and then set them on a search pattern. If there are ships in the area (and no submarines nearby), there's a good chance they will target the ships and head for the surface. Target the torpedoes to see which direction the surface ships are while you stay low and safe.

Pinging — A single active sonar ping is often not enough to target an object before you. When you use the targeting pulse, ping twice (one after another) in order to see *everything* you can. The rule is: if you ping once, you might as well ping twice. The consequences aren't that much worse. However, don't get carried away. Three pings are not necessarily better than two — you might give your opponent an unnecessary advantage by pinging too much.

EVASIVE MANEUVERS

Torpedoes — Torpedoes are small, fast, and capable of changing their speed and course faster than you. Not only can they physically outperform your submarine in the short run, there's no way for you to destroy them — unless it's with the side of your hull. Fortunately, torpedoes have limitations. Because they can only carry a small amount of fuel, torpedoes have a range of only 10 miles. Torpedoes also act in a very mechanical fashion — they're only as smart as the programs that direct them. In a word, torpedoes are *predictable*.

When a torpedo is launched, it will proceed toward its target until it hits the target, loses it, or is destroyed by surface ship anti-torpedo weapons. As long as the torpedo has a fix on the target, it will use passive sonar in order to stay as quiet as possible. If it loses contact with the target, it will immediately go active, pinging to find the target. If the torpedo can't locate the target, it will initiate a "search program." The torpedo will actively ping and rotate counter-clockwise in order to point its cone of vision (sensors) in all directions — the equivalent of you turning your head in order to look around a room. If the torpedo doesn't have a fix on a target after turning a complete circle, it will assume the target has dived deeper and begin spiralling down to the ocean floor. If it detects nothing while



spiralling down, it will generally spiral back up again. It will repeat this action until it finds a target or runs out of fuel.

In combat, a torpedo will usually lock onto some vessel before it actually has time to spiral down and back up. Once the torpedo has locked onto a target, it will switch to passive sonar, homing in on the noise the target is producing in order to draw as little attention to itself as possible. The optimal time to take evasive maneuvers is when the torpedo is in this passive mode.

Target the torpedo if you can and wait for it to reach your approximate depth. Its course will be constant as it heads directly for you — its speed may increase, too, as it moves in for the kill. First, release a noisemaker, then cut your engines completely. Increase or decrease your depth and change course. You'll know that you've fooled the torpedo if its course, depth, and speed remain constant as you change depth and course. It's important to wait for the torpedo to lock onto you before you release a noisemaker — if you don't, the torpedo will still be actively pinging. There's not much chance that an active torpedo will be fooled by your noisemaker.

When evading torpedoes, put as many thermal layers as you can between you and it. Let the torpedo follow you to the lowest depth possible, then release your noisemaker and cut your engines. As the noisemaker distracts the torpedo, climb to a safe depth, crossing as many thermal layers as you can. You can also lead torpedoes to higher depths, where they stand a chance of locking on surface targets.

Zoom Level and Time Projection — Torpedoes are your worst threat. Whenever you're alerted to active torpedoes or spot quick-moving sonar contacts, set the map display's Zoom Level on low setting (1-2) — you need to know *exactly* where the torpedoes are and where they're headed. At higher zoom levels, it's difficult to tell which torpedoes, if any, have locked onto you.

If time permits, set your Time Projection on 1. At Zoom Level 1, you probably won't see the course markers for your sub or the currently targeted torpedo unless the Time Projection is also set on 1. In close combat, you should think and operate on a very small time scale — every second counts!



MISSION REPORTS

The following Mission Reports describe excellent performances by U.S. and Soviet submarine commanders. (World War III provided the rare opportunity to procure a number of important Soviet naval documents, including the diaries of some of the Soviet Union's most celebrated submarine commanders.) The captains reporting here have distinguished themselves as brilliant tacticians. Their stories should serve as lessons to those finding themselves in similar situations.

TORPEX '89

From: Cpt. Mark Wallace

Subj: TORPEX '89 *Los Angeles* (SSN 688)

0:00:05

Surface contacts up ahead. I'm sure these are the destroyers we've been sent to sink, but the rules say we need positive identification before we go launching live torpedoes. This keeps us from accidentally burning merchant ships and the like — a damn good rule from the merchant's point of view. I definitely want to command a nuke when this exercise is done, so I'm going to play strictly by the book. I want positive identification, but I'm going to use the sonar analyzer to speed up the process. Using the sonar analyzer, I can see the unique "signature" or sound pattern created by an object in the water. I can readily identify an object by looking at what part of the sound spectrum it makes the most noise in. The sound analyzer aboard our ship breaks the sound spectrum into 16 separate "bands". An object can be identified by which band or bands it "peaks" in. For instance, each of the surface contacts up ahead produces intense noise (peaks) in the first band:



FIGURE 2: SIGNATURE, FORREST SHERMAN CLASS DD

I happen to know that this is the sonar signature of those old Forrest Sherman class destroyers. That's enough information for me to begin our attack run.

"Helmsman, 1/3 speed. Weapon Control, load and arm all torpedo and missile tubes. Sonar, deploy towed array."



I could target them easily with the periscope up, but that would mean risking detection. In a game that relies on stealth, patience is a virtue. I'll wait until we can target them with passive sonar.

0:04:02

The closest ship is only 3.2 miles away! We launch two torpedoes and dive to 150 feet. Three contacts appear directly behind us. Wait a minute! This sonar signature indicates an Alfa class attack sub!

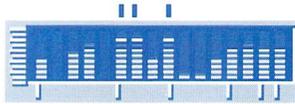


FIGURE 3: SIGNATURE, ALFA CLASS SSN

The two other contacts peak in the high end of the sound spectrum. Torpedoes!! The Alfa fired on us! The Russians must have been observing our exercise and got spooked when we launched torpedoes at the destroyers. But why they launched is irrelevant. We've been attacked, and my first duty is to defend my ship and my crew.

"Weapon Control, you better have loaded noisemakers or this mission is about to be cut short!" I growl.

The weapons officer reports both auxiliary tubes loaded with noisemakers. We release a noisemaker and cut the engines. The helmsman turns us 180° while we dive to 300 feet.

0:05:38

The torpedoes pass overhead and disappear from our display as we swing around to face the Alfa. We don't have a fix on the Alfa — we only know its course and bearing — but at this range, the torpedoes should have no problem finding the target.

"Launch four torpedoes! Sonar, target the torpedoes and monitor their course and depth!"

Our torpedoes maintain a steady course and depth. Either the torpedoes are chasing a noisemaker, or the Alfa isn't doing much to get out of the way.



0:07:22

Exploding torpedoes! That's music to a captain's ears in a close fight like this.

"Send active sonar ping!" I shout.

I breathe a sigh of relief as the sonar officer reports no active torpedoes before us. No Alfa, either. He grins and gives me the thumbs up.

"Captain," the XO asks, "Should we surface and search for survivors?"

"No," I reply, "My orders are to sink destroyers. Navigator, set a waypoint before the last known location of the destroyer group. Weapon Control, standby."

From: Cpt. John Paul Horsley, USN
Subj: TORPEX '89 Dallas (SSN 700)

0:00:05

I know my competition pretty well. The rogue commanding the *Los Angeles* in this exercise has a car salesman's face and all the scruples of your last divorce lawyer. In cadet school, he used every below-the-belt trick to put himself at the head of the class. The instructors never bought his glossy veneer for one moment, but they sure buckled under when his crusty old man — *the Vice Admiral* — put the squeeze on them to graduate his son with honors.

But now it's just me and the crew of the *Dallas* against him, and I'm going to take this last scrap of glory away from this scurvy dog before we graduate and go on to our respective commands. I've ordered the weapons officer to load and arm all torpedo and missile tubes — I'm not going in half-cocked when opportunity beckons.

0:00:05

The sonar officer reports a missile launch! How the hell did he target a ship so quickly? He probably *bought* the ship's locations from some loose-tongued yardbird. Well, at least his missile launch tells me he's in the same channel as we are, somewhere south of us.

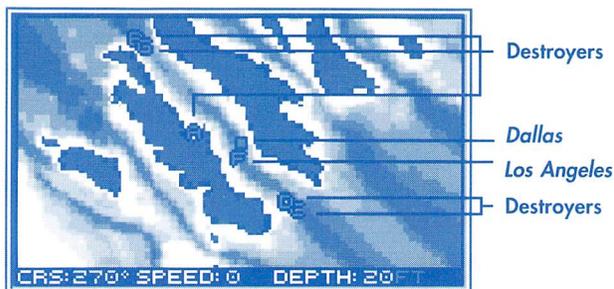


FIGURE 4: MAP WITH LOCATIONS

0:00:50

I order the helmsman to give me 1/3 power and a hard left turn while the sonarman listens for the familiar roar of surface ships. As we turn south, the sonar officer catches a few contacts amid the ocean noise.

"Give me a few minutes and I'll get a fix on 'em, sir," he reports.

Time is too short for that. What are my alternatives? Just the other day, a yardbird told me that the sonar devices on these old destroyers couldn't pick up a fart in a bathtub. There isn't a chance that they will detect us if we use a little active sonar. Hell, nobody is giving away points for subtlety, either. The sonar officer sends two pings. We target two ships, but I want to be certain that we are hunting the right prey. We analyze the sonar signature. Sure enough, there are two Forrest Sherman Class Destroyers a little over 10 miles away, steaming up the channel on a dead course for the *Dallas*. How convenient! They'll meet my torps somewhere in between. We'll send them two each.

0:02:00

No time to see the torpedoes in. I'll just have to assume that they will make it and that two each will do the job. Now I need to sink one more ship. The only other place to look is up the channel.

"Whip us around to 350°, dive to 150 feet and wind her up to FLANK speed, Hap," I order.

The helmsman looks a little shocked but dutifully obeys. We don't often operate at FLANK speed, but I don't care if we are as noisy as hell — nobody is launching torpedoes at *us*.



0:04:10

I thumb my nose at the *L.A.* as we overtake her heading north. We roar around the bend in the channel. My sonarman pings hard and two more destroyers appear on my display. The closest one is about 15 miles away, heading south. Even with him coming toward us, a torpedo would barely reach him. I wait for the gap to close to about 13.5 miles, then launch four torps his direction. I don't know if the *L.A.* has also launched torpedoes, but I don't even want to give him the *chance* of taking out one of the remaining destroyers. The last destroyer is still out of torpedo range, but I've still got missiles I can fire at it. It's a good thing my opponent used up his missiles early on. The moral of the story is, don't waste your missiles on an easy shot. Even if he burns the closer ship, I've got the last one. I can taste his misery now. We climb to 20 feet and fire both missiles in rapid succession.

SHAKE 'EM

From: Cpt. Edward Gwynn

Subj: Alfa Evasion

0:00:00

Things were looking pretty sweet until that Alfa crawled up on our tail. Now this weasel is going to stick with us until we lose him or give him a surprise he'll never forget. (It's tempting — real tempting. I can imagine my torpedoes caressing his hull.) I just tried radioing COMSUBLANT for a little help in shaking the Reds. The rear admiral is a pretty sympathetic guy about two days out of the year. Unfortunately, today isn't Christmas or his birthday. His reply: shake him yourself or pack your duffel for extensive shore duty.

0:00:30

We fire up the engines to 1/3 and make a hard right. Sure enough, the Alfa is still right behind us — its sonar signature gives it away. It's obvious that we are going to have to waste a little time doing some fancy footwork. I immediately order the diving officer to dive. At 900 feet we cut the engines and continue our dive, leveling off around 1200 feet. I let the ship coast to a stop. We have crossed several thermal layers and come to a complete standstill: this is as quiet as we are going to get.

0:02:30

I wait a few minutes before starting her back up. I only want enough power to set us on a new course: 350°.

**0:03:00**

We climb to around 700 feet and turn to 270°. I let the sub motor along for a minute before increasing power to 2/3. I hope by now that he's lost us so we can make a polite exit away from the area.

0:05:30

I set the throttle on STD and wait for the sub to pick up speed. The extra noise is worth the risk — if he's still on us, he'll have to step on it to keep up with us. That's exactly what I want him to do. The faster he goes, the worse his sonar capabilities get. The next time we cut our engines, he's going to have a hard time picking us up.

0:07:00

We cut the engines and dive. As we descend, we turn to 041°. We level off at 900 feet and set the engine back on STD. If he follows us through all of this, I'm going to surface and defect to their Navy.

0:10:00

Cutting the engines again, we dive to 1200 feet and use our momentum to turn to 345°. I let the ship coast to a stop. There's no sound of heavy Russian boots running up behind us, so we start up the engine and crawl along at 1/3 power. I decide we will cut the Soviets a wide berth by continuing southeast on a course of 140°.

From: Kpt. Djeoff Haasovskovich, Soviet Navy

Subj: Surveillance Mission

0:00:00

Many kapitans have failed to track an American attack submarine, but my disciplined crew will follow this Los Angeles class submarine like a bloodhound. The soft, weak-kneed tools of the capitalists cannot match our technology and training. Yes, they will run, but our superior speed will overtake them. Yes, they will dive, but their thin, brittle hulls will not withstand the same pressure our superior titanium alloys can bear. The commander of the American submarine before us knows this — he has made only feeble attempts to evade us! This is something of a disappointment for me; I expected a much more exciting chase. Such, however, are the tribulations of commanding a submarine.



0:00:12

I wait as my sonar officer, Pavel Levovich, gets a fix on our quarry. The American submarine is directly ahead of us. Other objects are in the water, too — merchant ships, schools of fish — but our trusty sonar analyzer keeps us from confusing them for our real target. Long ago, I learned the characteristic signature of a Los Angeles class sub.

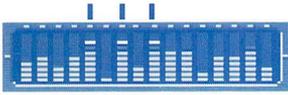


FIGURE 5: SIGNATURE, LOS ANGELES CLASS SSN

0:02:42

My sonar officer finally targets the Americans. “Good God!” he exclaims, “They’re scurrying off with their tails between their legs!” He reports a speed of 30 knots and climbing. I order the helmsman to ease us up to 75% power. Fortunately, the imperialists haven’t run very far: their range is only 3.8 miles. I keep a close eye on their depth: they’ve dropped to 495 feet, hoping to lose us below a thermal layer. Their ploy is useless, though. We simply bring our sub down to match their depth.

0:05:00

He’s getting worried, I can tell. His target marker disappeared from my display, which means that he cut his engines and probably changed course. Well, he isn’t going to get away without a good thrashing. I order Pavel to ping him — hard. Pavel swallows and reminds me that the Americans might interpret our ping wrong, perhaps as... “Ping!” I shout, slapping the back of his head with my glove. You must be stern with these subordinates — that’s the only way they ever learn. Pavel targets the American sub on a steady course of 187° , attempting to use some merchant ships to cloak its movement. He also reports two other submerged objects, heading our direction. The rate at which they are accelerating tells me they are torpedoes. Pavel glances worriedly in my direction. “They probably aren’t even armed,” I reassure him. Just to be safe, though, we drop a noisemaker, cut the engines and dive. As we descend, I instruct the helmsman to make a new course: 187° .

0:06:28

He’s going over a ridge in the ocean floor. His strategy is plain enough: once he is over the ridge, he will dive deeper and probably change course. We rise to 577 feet in order to follow him over. The torpedoes he launched are pinging away behind us. I notice with some amusement that they are on the surface and heading for a merchant ship.



We come over the ridge and ping again. By now he should realize that we are not out for blood — we are just playing a little game of dog and cat. He makes a small turn to the right, then slows to a stop. He is hoping we will sail right over him so he can slip away through our baffles. I order the helmsman to use REV to slow us to a stop. We will just sit here and ping him now and then to make sure he is not going anywhere.

0:10:10

Ha! He is trying to be sly by turning to a course of 172° . The helmsman asks if we should start out after him. I tell him to maintain minimum speed and keep our nose pointed in his direction so we can get a decent reading. Of course, we will have to follow his depth pretty closely, but as long as he does not get too far away, we do not have to stay *right* behind him. Since we're using active sonar, there's no need to match his every move.

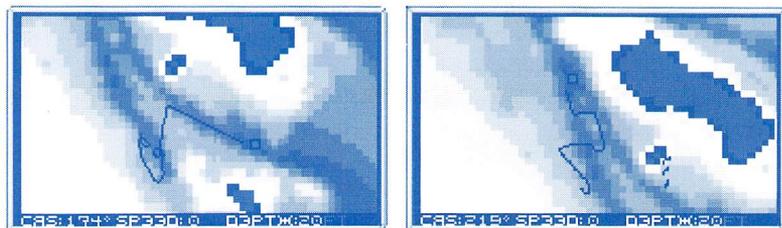


FIGURE 6: L.A. EVASION STRATEGIES

SUB OPS

From: Kpt. Hilmanov, Soviet Navy

Subj: Coastal Patrol

0:00:04

Another routine patrol off the coast, and as usual, the port is busy with the healthy commerce of collectively manufactured goods. We turn left, analyzing the contacts that we hear around us. A Koni class frigate is out on maneuvers:



FIGURE 7: SIGNATURE, KONI CLASS FF

Several more vessels are putting out to sea — a Charlie II class guided missile submarine (SSGN) and a few merchant ships:

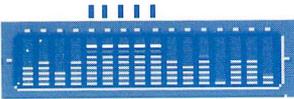


FIGURE 8: SIGNATURE, CHARLIE II CLASS SSGN



FIGURE 9: SIGNATURE, MERCHANT SHIPS

Two more contacts. A Slava class guided missile cruiser —not of much interest to us — and an attack sub. Ah, but this is no Soviet attack sub; my memory is quite infallible when it comes to our sonar signatures. I check our intelligence reports: the sub before us looks conspicuously like a British Trafalgar attack sub!

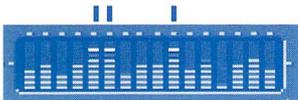


FIGURE 10: SIGNATURE, TRAFALGAR CLASS SSN

This represents an intrusion into Soviet waters, but a very fortuitous one for Kapitan Hilmanov. How will my commander reward me for routing an intruder from our sublime waters? An apartment in Moscow? A vacation on the Adriatic?

“Comrades,” I cry “We must defend the Motherland at once! Give me 150 feet and 25% power. Keep their bearing at 000°.”

0:04:52

The target is on a course of 155°. Speed: 14.5 knots. Depth: 0 feet. Rather too close to the surface, professionally speaking. We will watch his bearing and keep it at 000° so we can gradually turn right onto his course. He isn’t changing his depth at all, which makes following him extremely easy.

It dawns on me that he is tracking something himself. In fact, he is so intent on his mission that he is very careless about clearing his baffles. Tsk! He needs a tactics lesson from the Soviet Navy. In any case, the most important object in the area he could gather intelligence on would probably be the SSGN.

As we turn and match his course, I order the helmsman to give us 75% power so that we will quickly catch up to him. While it is true that Soviet subs are somewhat noisier than



those of the west, we have nothing to worry about. We are safely in the British sub's baffles. There is little chance that he will detect us.

0:11:26

1.5 miles away from the British sub. "Cut power to 50%." We are still moving pretty fast — soon we are within .7 miles. I order the sonar officer to ping him and keep pinging him. We will scare the soft imperialists right out of their Bermuda shorts!

Ha! Their captain reads me loud and clear! They are making a 90° turn and going to FLANK speed. We'll follow them, of course, pinging them until their ears bleed.

MUMAR CADAVER

From: Cpt. James T. Bailey, USN

Subj: Libyan Convoy Intercept

0:00:05

Yes!! The Libyan tankers have finally trickled through the Strait of Gibraltar. The crew's in for a duck shoot this time. Lester over there's giggling and rubbing his hands. It's an unconscious response of his when he's really excited. Lester's the Weapons Officer. He can't stand it any longer and runs for the Torpedo Room.

"Lester! Arm *all* torpedo and missile tubes!"

"Yessir!" He gives me that big homeboy grin of his.

We're deploying the towed array and setting the ship on a slow right turn to pick up contacts. There are at least two ships grinding away to the southeast. Judging from their sound signatures, we've got us a couple of tankers to shoot at.

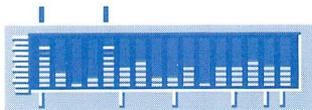


FIGURE 11: SIGNATURE, TANKERS

The sonarman has targeted a tanker at 9.4 miles and another at 14.6 miles. I've got the periscope up to get a better look at what's around us. About 10 miles southwest of us, two more tankers are cruising toward the Atlantic. That makes four tankers in all, two on each



side. The tankers closest to the open sea are the logical ones to hit first. I'll tell the navigator to set a waypoint.

0:03:12

The helmsman pulls us around. More sonar contacts! The sonarman singles out one that's definitely another submarine. I'm 99% sure we're sharing the water with a Soviet-built Foxtrot sub.

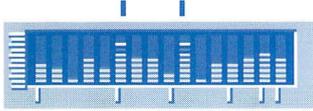


FIGURE 12: SIGNATURE, FOXTROT CLASS SS

The Soviets quit building Foxtrot submarines for their own navy in 1968. The Foxtrot was a reliable diesel-boat, but I can't imagine the Russians still patrolling in them. I remember that Libya had at least eight Foxtrots in their submarine fleet. If they're suspecting U.S. retaliation, they might deploy submarines to guard their tankers. I'm not going to assume this sub's hostile, but I'm not going to turn my back on it for long either.

"Give me 2/3 power. Lester, get ready to punch that launch button."

We head southwest and pick up another Foxtrot sub somewhere to our port. Well, we came to play ball and the Libyans brought their own bats. Good. We're going to see who can hit the hardest.

0:05:20

Those tankers are slow as pregnant cows, so it doesn't take long for us to get within eight miles of them. "Lester, send each tanker two torpedoes. Diving officer, dive to 270 feet. Helmsman, turn east to a 111° course." Just as we swing around, we find more submerged contacts in the water that weren't there just minutes ago. I get suspicious when the head count of things around us suddenly goes up — probably means torpedoes. The sonarman targets them running at 44 knots, and their sonar signatures are at the high end of the range. A single press of the high filter button confirms my suspicion that the remaining targets are torpedoes. And what's worse, they're heading right for us. Things are getting a bit more complicated.



0:09:06

We release a noisemaker and climb to 20 feet, but my timing's off. A torpedo follows us and blasts the ship! I hang onto the periscope as the ship takes a wallop that could knock apples out the high-end of a horse. My crew's doing their best to stay out of each other's laps. This ship's shaking like some amusement park ride from hell!

The crew fights to stabilize the ship. Lucky for us the blow glanced off the mast and only damaged our antenna. Damn! I should've fired the noisemaker sooner. We can't afford a direct hit. It's bad enough that I have to return with a broken antenna.

One torpedo's still out there pinging away. We've got it targeted. I can only watch its depth and speed as it searches for us. It's entering a steep climb and increasing speed. The high-pitched sonar scream suddenly stops. Damn! It found us and it's locked on! "Release a noisemaker. Cut the engines and dive. Change the course 90 degrees." We'll keep the torpedo targeted as we dive.

Fooled it! It didn't follow us down. It just passed harmlessly overhead. After we dive a couple hundred feet, I'll use the ship's momentum to turn us back toward the Libyan ship.

0:09:45

This guy's pulling his punches. Was he stupid enough to think that two torpedoes would enough to scare us off? He's an idiot for not going for the jugular outright. So much the better for me and my crew. I'm going to teach him how this game's played. "Ping him twice." He's only 1.8 out — that's just a spit away. "Launch four torpedoes." Between pinging and launching, everything out there with ears knows where we're at, including that active torpedo of his that's still lurking around. There! We target it just in time to see it dive for us. We're going to have to duck it one more time. Since the torpedo's now passive, we'll launch another noisemaker and rise to 150 feet.

0:11:10

Looks like we shook the enemy torp. We turn towards the ships. We can't launch until our torpedoes reach that Libyan submarine. In the meantime, we'll target the next tanker that's about 5.8 miles away.

0:12:05

Four torpedoes reached their target. Lester's probably down there with his eyes rolled back in holy rapture. Lucky for him there's still more to come.



"Launch three more torpedos at the next tanker."

Two will probably do the trick, but three will guarantee that the job gets done. We target the last ship, but it's still out of torpedo range.

"Bring us up to periscope depth."

We'll use missiles to finish these turkeys off. Near the surface we hear active sonar approaching from the west. A quick analysis tells me that there are Koni class frigates in the area looking for us. If they were a threat, I'd use Harpoon missiles to take them out before they were in range to hit us. But it looks like they're too far away to do more than make angry faces at us. Since we've got the lead on those frigates, we'll use the missiles to burn that last tanker and make a quick getaway.

"It's great," reports an elated Lester, "The torpedo room hasn't been this empty since dry dock!"

ESCAPE

From: Cpt. Dave Nielsen, USN

Subj: Mediterranean Evasion

0:00:05

I guess we had it coming to us. We'd spent several weeks in the Mediterranean, tracking vessels and practicing surveillance with success. Now the Russians are going to try to sharpen *their* hunting skills on us. American credibility is at stake — my CO has given me direct orders to send the Russians home with an even bigger inferiority complex than they came with.

"Helmsman, give me 1/3 power. Navigator, set a waypoint over the deepest part of the Strait."

Hell, we won't be doing top speed until we've lost the Russians and made it to the Atlantic, so we might as well give ourselves the best hearing capabilities we can. "Sonar Room, deploy the towed array."



0:04:34

Brief contact with a Russian sub. Sonar analysis identifies it as a Victor III:

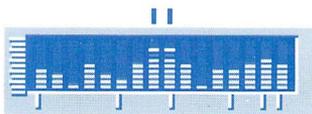


FIGURE 13: SIGNATURE, VICTOR III CLASS SSN

His course is 164° . My guess is that he isn't aware of us — otherwise he would change course to head our direction. Nonetheless, the longer we spend in the same thermal layer with him, the greater the chance that he will detect us. When we reach the waypoint over the deepest water, we'll dive to 700 feet.

0:09:02

Getting nervous about this Victor III. We keep getting faint contact on him. If we can hear him, there's certainly a possibility that he can hear us (though we aren't revving our engines like he is). He's on a course of 273° . I still don't think he knows we're here. Well, the deeper the better; cut engines to 1/3 and dive to 850 feet.

0:12:15

It will take us forever to get out of here at 8.4 knots. I've got to make better time than this. I'll have the helmsman ease us up to 2/3 power.

0:18:00

We reached the first waypoint. This is a good place to clear the baffles. We cut engines and turn, but no contacts appear on my display. I'll take that as a good sign that we don't have any bears in tow. I direct the diving officer to take the sub up, pausing in each of the thermal layers to listen for Soviet subs. Around 500 feet, we get brief contact on a Victor III going 000° . He's obviously hunting by cutting across the Strait on a north/south/north search pattern.

0:25:20

At a 150 feet, we get contact on an Alfa class sub to the south. After a minute we target him and...holy Toledo, he's only a mile away and heading strait for us! At 14 feet, he'll pass right over us. The real question is: Does he see us?



0:28:58

The Alfa passes overhead and we dive. Around 500 feet, we briefly target a Victor III at 6.6 miles away. We better go *real* deep. We level off at 1044 feet. I better clear the baffles one more time before continuing, just in case that Alfa had followed us down.

0:35:08

No Alfa in sight. The helmsman turns on the auto-pilot and eases her up to 2/3 power. We'll resume our westerly course.

0:53:46

Cleared the baffles again and didn't detect a thing. We check the other thermal layers again. The sonar officer reports a Victor III at 513 feet, maintaining a course of 358°. He's been following that course since we first got wind of him: he doesn't have the slightest idea where we are. The sonar officer brings another signature for my confirmation. There's no doubt about it. There's an Akula somewhere to the northwest:

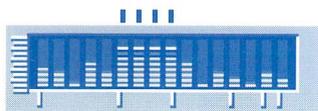


FIGURE 14: SIGNATURE, AKULA CLASS SSN

The whole Russian fleet is out searching for us! We'd better hide in deep water. We dive to to 900 feet and slowly go to 2/3 power.

1:11:43

Cleared the baffles again. I'm almost certain that there are two Victor IIIs out there! Including the Alfa and the Akula, that's at least four subs hunting us. To their discredit, none of them seem to be tracking us. The Soviet admirals will be frothing at the mouth if all four of those captains return empty-handed!

1:23:18

Approaching crook in channel. Turn and clear baffles. No subs sniffing our tail, so we'll go to 150 feet to look around. We target the Akula at 278 feet, heading straight for us! Did he have us in his sights all this time? Or did we just happen to rise in his path? We'll dive to 1000 feet and turn on the contour map to help us lose him in the underwater canyon. We turn west and proceed at 1/3 speed. From here on out, we'll crawl along at low speed, cutting our engines periodically...



From: Kpt. Mikhail Isgorod
Subj: Mediterranean Intercept

0:00:05

If our estimations are correct, the Americans will be exiting the Strait any moment now! It will be a trick to monitor them for more than 50 minutes. The helmsman increases power to 1/3 and puts our ship into a slow left turn so we can continually clear our baffles and search for contacts. Only fish near the surface? OK, we'll dive just deep enough to cross the first thermal layer.

The sonarman got contact on a submerged object. The American SSN! Its bearing is changing quickly — it's practically brushing sides with us! We must turn with it.

"Helmsman, bring us around!" I cry.

0:14:07

How quiet this American sub is! We get contact on it, but then it disappears like a ghost. We barely have time to note their bearing and course. Fortunately, this is almost enough. Keeping their bearing at 000° gives us the best possible reading, while changes in course tell us which way they're turning.

0:15:22

Damn! Lost them again. We'll have to dive below each thermal layer and listen.

0:19:31

They have slipped through our fingers completely! Pinging them is risky, but it's a better alternative than losing the game. I direct the sonar officer to send an active ping.

There they are! Clearing their baffles.

"Navigator, set a waypoint at their location. If we lose them, we will know where they set off from. Helmsman, we will sprint to their last known location at 100%. As we draw closer to the waypoint, we will cut our engines to 25% to increase our listening capabilities."



0:43:20

Our method of sprinting to their last known location and listening worked while they were moving at high speeds. They must be travelling at lower speeds, because we seem to have lost them. We'll have to ping them again to find their new location.

What's this? They've launched torpedoes! Well, at least they are a good distance away. With plenty of room to maneuver, we will not have to waste a noisemaker.

"Helmsman! Increase speed to 100% and start changing depth as quickly as you can! But whatever you do, stay on course!" Changing depth rapidly is *sometimes* enough to evade enemy torpedoes. Each time you change depth, the torpedo must register your movement, then slow down in order to follow you.

0:53:42

The Americans maneuver like a fish trapped in a net, forcing us to ping more often. Their torpedoes keep coming, but we evade them all. Fortunately, this will end as soon as they reach the Atlantic. We need only keep them in our sights and stay in range and we will have accomplished our task.

GOULASH

From: Cpt. Mac "The Knife" Humes, USN

Subj: Yugoslavian Armed Resistance Front (YARF) Convoy Escort

0:00:05

Hasty promises and aggressive posturing have forced both superpowers into an unstable situation. The Soviets have promised to crush any non-communist regime in Yugoslavia, and the Soviet Navy has orders to shoot to kill. NATO, on the other hand, formally recognizes the provisional capitalist government and pledges aid to the freedom fighters. The goal of my mission is plain enough: protect six Italian cargo ships from Soviet forces patrolling the Adriatic.

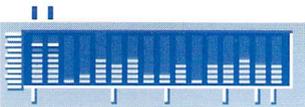


FIGURE 15: SIGNATURE, CARGO SHIPS



They've given me the authority to do whatever is "necessary" to see the cargo ships into port, including confronting the Soviets. Nonetheless, I know the brass would prefer that I avoid confrontation: the media is giving us a bad time as it is. Personally, I'd like to avoid hostilities as well. I'm going to try to draw the Soviets away long enough for the cargo ships to reach Trivat. If I can't distract the Soviets, I'll engage them. But no matter what happens, we'll have to find the warships well before they're in range of the cargo ships. If the Soviets so much as *sight* the convoy, they'll call an air strike and blow those supplies clear out of the water.

I assume the warships are making their way up the coast from Albania, following this standard Soviet patrol pattern:

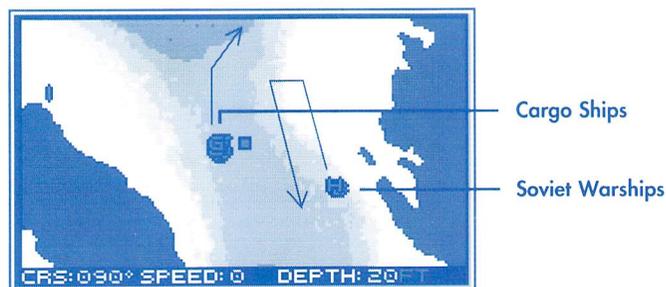


FIGURE 16: MAP OF LOCATIONS, SOVIET SEARCH PATTERN

The warships will have to be diverted while they're still along the coastline. We'll drop below a thermal layer and sprint east. Hopefully we'll intercept them before they swing out into the Adriatic.

0:04:10

We've cut the engines and climbed to periscope depth. The sonarman reports surface contacts to the southeast. Without a doubt, these are Soviet warships — a Slava class guided missile cruiser and a Kirov class battle cruiser.

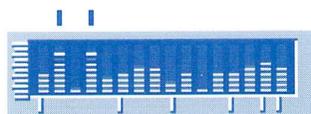


FIGURE 17: SIGNATURE, SLAVA CLASS CG

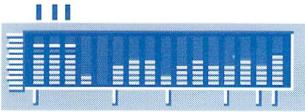


FIGURE 18: SIGNATURE, KIROV CLASS BC

We turn toward the warships and dive back beneath the thermal layer, kicking the ship into STD. If I'm going to let them know I'm here, I don't want to be anywhere near the cargo ships. It also wouldn't hurt to be within torpedo range of the warships.

0:09:46

We rise to 150 feet and ping. The warships are not only interested in us, they waste no time launching anti-submarine missiles at us. We've now got torpedoes coming at us from all sides. The water is ringing with active sonar.

The 'nice guy' strategy I was pursuing will lead me and 120 other people to an early, watery grave. The Russians are asking for a fight, and I'm about to make sure their request gets stuck in their craw. But before I do anything else, I have to shake the torpedoes that are dancing around my ship. We drop a noisemaker and cut the engines, diving as deep as we can.

We wait near the ocean floor for the torpedoes to come down after us, then begin changing depth rapidly. The torpedoes follow us down two full dives and up two full climbs before they run out of fuel. As the last torpedo disappears from the display, we target the Slava and Kirov bearing down on us less than two miles away. They haven't targeted us or they'd be dropping depth bombs by now. There's no use trying to outrun them, and a not-so-secret attack from the front would be like pleading for a bullet between the eyes. I decide to take a chance and let the ships pass over us. We descend as quickly as possible to the ocean floor.

0:15:50

As we drop, the sonar operator picks up a contact to the east — an Alfa class submarine! I don't know how far away he is, so I don't dare turn my back on him for very long.

The massive ship screws of the Kirov and Slava rumble overhead. I played possum and got away with it! Had they known we were here, they would've pummelled us many times over.



0:17:32

We turn to the warship's course and go to periscope depth. I raise the periscope and target the Kirov. The Kirov has the most weapons and it's farther away than the Slava — both good reasons to take it out first. "Launch four torpedoes," I say calmly. The warships are cooking at full speed and don't hear the launch or the torpedoes. At least they aren't taking any evasive maneuvers.

I'm nervous about that Alfa: just how far away is he? We rotate to the east and ping. He's 8.8 miles away, heading straight for us. Well, we won't have to worry about him for a couple of minutes. I target the Slava and take the necessary time to fire Harpoon missiles at it until it sinks.

0:22:46

After I launch the last missile, I switch to the top-down map. The Alfa's still there...and he's launched four torpedoes at us! We immediately drop a noisemaker, cut the engines and dive to 600 feet. The torpedoes pass safely over us.

We start toward the Alfa at 1/3 speed. He's speeding toward us at 19.5 knots. I wait until the gap closes to less than three miles, then fire four torpedoes at him. We cut the engines just in case he decides to lob a few more back at us. Apparently, he can't hear too well at his present speed, because he isn't doing anything about the four torpedoes that are about to pop him like a nickel balloon.

CATWALK

From: Cpt. Russ Reiss, USN

Subj: SSBN Intercept

0:00:05

I've just received word that a Soviet boomer has left port to resume its patrol in the Pacific Ocean. The SSBN will have to proceed through the Kunashir Passage. SUBCOMPAC has directed me to intercept the SSBN as it passes through the Kunashir "choke point."

These SSBNs typically travel low and slow to their patrol sectors. I'm guessing that this SSBN will travel deep through the underwater canyon. My strategy will be to come up the passage from the southern end and intercept the SSBN. I've ordered the navigator to set a few waypoints up the channel. We dive to 150 feet and accelerate to 16.9 knots. As we



come over the deep water of the passage, I order the diving officer to bring us down to 700 feet. We'll need a do a little tricky navigating to avoid shredding our hull on the canyon walls. The helmsman turns on the new contour imaging gadget to guide us through.

0:05:28

My sonar officer reports a contact to starboard side. A quick analysis reveals it to be an Alfa. The boomer has friends — I'm not surprised. The Alfa must be securing the path for the SSBN. The Alfa's bearing and course indicate that it's probably still in the northern half of the passage. There's a bend up ahead that looks like it will be a good place for an ambush. With luck, we'll reach the bend before they will.

0:10:44

We've made it around the bend and cut our engines. I wait as the *L.A.* coasts to a stop. The SSBN could be at any depth. I try to imagine for a moment what I'd do if I were expecting an attack — probably stay as low as I could to avoid detection from ASW forces. "Bring us down to 950 feet," I order. We're going to hug the bottom and wait.

0:14:08

A contact, bearing 010°. Fortunately, I know sonar signatures — this is definitely our man:

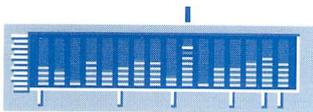


FIGURE 19: SIGNATURE, TYPHOON CLASS SSBN

We manage to target the Typhoon. It's turning slowly, clearing its baffles. I want to wait for the boomer to draw closer before firing. No mistakes!

0:20:32

The Typhoon is at 3.2 miles. The Alfa passes over us without so much as introducing itself! A thought flashes in my mind: he's going to stab us in the back! It doesn't add up, though. He wouldn't risk turning around and taking a shot in the boomer's direction.

The sonar officer reports a marker buoy directly over the boomer! Our ASW forces have made a brilliant move this time. We're sitting here within a stone's throw of the Typhoon



and those knuckleheads above us are practically hitting the Russians over the head with the news that someone's hunting them.

0:28:00

With the Typhoon at less than a mile away, we fire four torpedoes at the boomer and...they all miss? I stand dumbfounded as my torpedoes fly blindly past their target. Meanwhile the SSBN sails over us. I collect myself and shout "Turn us around!" The helmsman puts the ship into a hard turn.

"Weapons Control, detonate those damn things!"

The ocean reverberates with the sound of underwater explosions. We turn a full 180° and ping. Sure enough, the SSBN had unwittingly cruised right by death itself and right over us. I direct the weapons officer to launch four more before that Alfa realizes what is going on.

From: Kpt. Mikhail Meischeid, Soviet Navy
Subj: SSBN Protection

0:00:05

My superiors gave me a clear message concerning my future as a kapitan and a living being; my head would adorn Red Square if this SSBN did not see open sea. The Yankees will surely attempt to sink the SSBN in the Kunashir Passage. They have patrolled the passage heavily since the start of the war and managed to sink a number of Typhoons. With the continuity of my neck in mind, I studied the mistakes of my unsuccessful colleagues (may they rest in peace). Their fatal flaw, I decided, was that they consistently let the Americans get too close to the SSBN. I plan to go out well in advance of the SSBN and search for hostile ships. I must find the enemy before he is a threat to the ship I am protecting. Anything else would be putting the trailer before the horse.

Fortunately, I've been down this channel many times. I know how treacherous it is. I've found that it's easier to stick around 550 feet so you don't have to worry so much about damaging your hull. At this depth, my sonarman should be able to hear a little of what's above *and* below us. The navigator sets a few waypoints. We slowly accelerate to 100% speed. I want to get a good start on the SSBN. In the meantime, I have the weapons crew arm torpedoes and noisemakers.



0:04:45

We reach the second waypoint, just before the bend in the channel. The helmsman cuts engines to 25% so we can hear a little better. At the same time, I order the sonar officer to ping twice. The sonar operator informs me of a contact to port. It's definitely a Los Angeles class attack submarine. From the look of its course and bearing, it's making its way up the passage. We'll have to get around the bend before we can try to target him again.

0:07:54

"Send two active pings!" I shout. The sonar officer collects the target information: the 688 is 6.4 miles away, heading up the channel at 33.1 knots! As the Americans would say, he's hot to trot.

"Match their depth!" I cry.

As we reach 550 feet, we realize they have launched torpedoes at us. I order the crew to release a noisemaker and climb to 80 feet. We target the enemy torpedoes...they're rising with us! Damn!

"Evasive maneuvers?" asks the helmsman.

"Not yet," I reply. "Wait until they reach our depth. Weapons Control, release noisemaker on my command!" Within seconds the torpedoes go passive, so we drop another noisemaker and dive to 550 feet.

The foolish Americans! They have stayed at the same depth. Now it's their turn to thrash about...

"Launch four torpedoes."

0:12:10

I count four torpedoes striking the 688. I don't imagine one of their subs could survive that.



SURPRISE PARTY

From: Cpt. Scotty Cronce, USN

Subj: Task Force Escort

0:00:05

Our position is in the rear of the battle group, where we can periodically turn and scour the sea for hostile ships. It's time for another routine sweep of the ocean. I raise the periscope to get a fix on our surface vessels — that's a few less contacts we have to sort through. The helmsman rotates the sub so we can target other objects in the vicinity with active sonar. Since the battle group doesn't have a chance of traveling silently, using our active sonar certainly won't give us away.

"Ping every quarter turn," I remind the sonar officer.

"Yessir."

"Contact to northwest, sir," says the sonarman. "Sounds like a submarine."

I study the object's sound signature: an Alfa. "Standard speed. Make a course for the target. Keep the bearing 000°."

0:02:50

He's fired torpedoes at the battle group. Well, no way to warn the ships or intercept the torpedoes. I can only hope the Alfa is distracted by the battle group long enough for me to get in range.

0:06:20

We hear the Alfa's torpedoes tear into the surface ships' hulls. I'm almost in range. "Helmsman, bring us down to 2/3 power. Sonar, deploy towed array." His bearing is changing fast. I don't want to lose him, so we ping him. He's at 924 feet, so we dive to match his depth. He's only 3.9 miles away and turning toward me. I want a surer shot than that!

0:08:09

We ping him again. He's dropped down to 1028 feet, but he's only a little over two miles away. That's close enough to send him four torpedoes! We fire just in time to see him disappear from the display — he knows we've fired and he's cut his engines. One of our torpedoes will tell us if he's given us the shake. Nope. It isn't changing course or depth. Unless he released a noisemaker, he'll be dead in about 50 seconds.



From: Kpt. Djeoff Haasovskovich, Soviet Navy
Subj: NATO Task Force Intercept

0:00:05

We rotate, and Pavel Levovich listens with that curious concentration sonar operators have: his eyes are closed, while his hands delicately press the headphones to his ears. He could be asleep or meditating. Suddenly his eyes spring wide open.

“Captain! By the sound of it, the whole U.S. Navy is going to France! There!” He points to the map.

“Navigator,” I shout, “Set a waypoint in the direction of the contacts. Take us down to 1000 feet and bring us up to 50% speed.”

0:05:26

Pavel reports active sonar.

“Helmsman,” I cry, “Cut engines to 25%. Bring us to periscope depth.” I want to see what it is that fortune has placed in our crosshair.

I raise the periscope. The huge form of a Nimitz class aircraft carrier fills my lens. There are more warships out there, too. The ships are still a good distance away, so I lower the periscope. We’ll motor along until we move into range. In the meantime, the sonarman will use the sonar analyzer to tell us what we are up against:



NIMITZ CLASS CVN



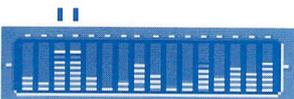
OHP CLASS FFG



KIDD CLASS DDG



SACRAMENTO CLASS AOE



IOWA CLASS BB

FIGURE 20: SIGNATURES,
NATO BATTLE GROUP



0:09:48

I briefly consider the configuration:

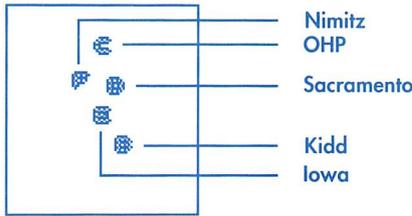


FIGURE 21: BATTLE GROUP CONFIGURATION

The closest ship, a Nimitz, is still eight miles away. That's not optimal, but it will have to do. We'll launch two torpedoes at the Nimitz and two at the Oliver Hazard Perry frigate. Pavel picks up another target: a Los Angeles class attack sub. Excellent! An opponent worthy of my brilliance.

0:11:59

The imperialist submarine is diving. The fool didn't hear us until we'd already launched torpedoes. "Dive!" I command. We find the 688 at 500 feet, heading for us. I order the helmsman to turn toward it. Like medieval knights at a joust, we race toward each other. The sonar crew deploys the towed array — in a close duel, we need the best sensing capabilities we can get.

0:16:46

"He's cut his engines, sir," Pavel reports, "Or changed depth. In any case, we've lost him."

"Ping him," I reply. We target him at 122 feet. He's only 3.3 miles away. There are no torpedoes coming at us, so we'll go ahead and launch torpedoes at him. He can consider that just a taste of what's to come.

It doesn't take long for the torpedoes to reach him. Pavel tells me he's still running.

"More like limping," I muse.

The weapons officer begs to fire two more, but I remind him that we must use our precious torpedoes sparingly. One more should do the trick.



Pavel informs me that some of the torpedoes we launched at the ships ran out of fuel. Damn! Wasted torpedoes could cost us our lives!

0:20:00

With its hull ruptured, the 688 collapses under the pressure of the surrounding water. I smile momentarily: one tiny step closer to the inevitable collapse of the capitalist state! How fortunate I am to be a cog in the grand wheel of history!

Only surface ships left, now. We can throw the caution to the wind! But first we must know exactly where those targets are. I direct the sonarman to send an active sonar ping. Pavel carries out the order. In answer to our active sonar, the Americans launch ASROC missiles! Perhaps we should not throw *all* caution to the wind...

Within seconds, new contacts are detected and new Xs appears on my display. The ASROCS have dropped their torpedoes somewhere to our starboard side. We target one of the torpedoes so we can monitor its course. I watch as the torpedo begins making a familiar counter-clockwise turn. Excellent! It doesn't have a lock on us yet. This is a golden opportunity.

"Hard left!" I cry. If we stay out of the torpedo's cone of vision, it may lock onto some other object — say, a surface ship. Pavel rattles off the torpedo's changing course: 189°, 188°, 187°...

"Captain, it's holding at 169°!" reports an elated Pavel. "By the looks of it, it's locked onto one of their own warships!" The crew cheers at the thought of NATO forces slaughtering themselves.

"Excellent!" I cry. "Dive to 900 feet! We're moving in for the kill!"

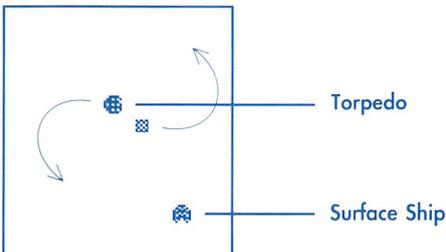


FIGURE 22: TORPEDO EVASION



0:24:08

We cut the engines and go to periscope depth. At this range, the ships are easy to target, but I don't know which ships we've already hit. I raise the periscope. The frigate is gone — she must be at the bottom of the ocean. The Nimitz took damage from one of their own torpedoes, but it's still afloat! I can't allow that. We launch three torpedoes at the aircraft carrier and dive back down to 900 feet. As we descend, I order the helmsman to increase speed back up to FLANK. He looks at me as if I'm mad.

"Don't look so surprised, Petr Alexandrovich," I say, "We are going to circle the Americans like Indians around a covered wagon!" I know that once the warships know we are here and are looking for us, our best advantage will be our superior speed.

0:29:56

Our torpedoes reach their target. At the same time, active torpedoes are hunting us. Where did they come from? Perhaps the Americans have deployed Seahawk helicopters to hunt us? Let them. Very soon these helicopters won't have any ships to land on.

The Nimitz's screw hasn't quit spinning — one more torpedo should finish her. Pavel reports that it is now directly north of us. We shut down the engine and turn toward it. We will have to head for periscope depth to target it again.

0:32:05

Periscope up. The Nimitz is burning. One more torpedo at the aircraft carrier should do it.

"Navigator, set a waypoint on that oiler's current position. Take us back down to 900 feet and bring us up to FLANK speed."

0:34:03

"Captain!" cries the sonar operator, "Contact abaft! The Kidd class missile destroyer. From the change in bearing, it must be *very* close!"

We would suffer a fatal barrage of depth charges if she found us. To let it get this close was a serious mistake. "Cut the engines! Point us at her and take us up to whatever depth necessary to get a firm fix!" Petr is breaking out in a sweat as he executes my commands.



We target the missile destroyer: he's literally right on top of us! We cannot take chances. "Launch three torpedoes! NOW! Take us down."

0:38:40

All three torpedoes hit! I was foolish not to eliminate the missile destroyer first — I will not make *that* mistake again. We head back to the surface to target the oiler. Two torpedoes should be enough to kill her. While we're near the surface, we rotate to see if there's anything left in the water to spend our last two torpedoes on. To the south, an Iowa class battleship — the only remaining ship in this battle group — is trying to escape. We set a course for her and dive again to 900 feet.

0:41:10

With our superior speed, it takes no time at all to catch up to the battleship. Petr cuts the engine while we ascend. We don't even need to reach the surface to hear the battleship's heavy screws turning. Rather than risk death by depth charge, we fire our remaining torpedoes from below. Since we have emptied our arsenal, there's no need to stick around and wait to see the outcome.

HOME COMING

From: Cpt. Randolph Hilleman, USN

Subj: Convoy Escort

0:01:18

A routine sweep with active sonar indicates an Alfa class submarine somewhere northwest of the convoy position. I order all torpedo and missile tubes loaded.

0:02:34

Sonar reports a missile launch! Submerged object targeted 11.3 miles west of our position. Sonar analysis proves it's an Oscar class guided missile submarine:

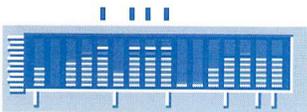


FIGURE 23: SIGNATURE, OSCAR II CLASS SSGN



0:03:22

We take a few minutes to fire Sealance Anti-Submarine missiles at the Oscar. That should keep him from firing missiles until we get to the scene. The sonar operator targets the Alfa: 17.3 miles northwest of us, cruising just below the surface at 20 knots. We launch a few missiles at the Alfa, too, just to keep him in line.

"Make a course for the Oscar. 150 feet, FLANK speed." The SSGN is capable of launching deadly weapons from a greater distance. It was imperative that we knock it out before it inflicts too much damage on the battle group.

0:06:45

As we approach the Oscar, we cut the engine to 1/3 power. The Oscar is diving deep, so we follow him to 1000 feet. There are torpedoes all over the place here! We better use the high pass filter to tell the subs from the torpedoes. We'll know which contact is the SSGN because it will be the only contact that disappears on high pass.

0:07:22

Damn! Our own torpedoes have locked onto us. I'd hammer this guy, but I'm about to get hammered myself...by our own weapons! We release a noisemaker and rise.

0:09:54

We dive back down, but there is no sign of the SSGN anywhere. I order the sonar operator to ping. Just in time, too: the Alfa is out for our blood! We target him at 2.4 miles away.

"He's launched torpedoes, sir," reports the sonar officer.

I smile. "Please, return the favor. Give him two torpedoes to keep him busy. Then release a noisemaker. Helmsman, cut the engines. Put us into a steep climb."

0:12:02

We neutralize the dive around 500 feet. Everywhere, torpedoes are singing their song of death. Despite the risk, I order the sonar officer to send an active ping to Ivan. The ocean is filled with contacts. We patiently analyze each contact that we are sure is not a torpedo.

"Two Alfas, sir?" asks the sonar officer.



"No," I reply, "One must be a noisemaker. Watch them both as best you can. The one that moves is the live one."

"One is bolting, sir!"

We launch two torpedoes at the moving Alfa. Seconds later, one torpedo hits. The other torpedo is heading for the surface, so we detonate it.

0:13:29

We target the Oscar just as several more Mark 46 torpedoes strike its hull. Their captain apparently didn't do too well evading all the torpedoes we sent him — he went belly up right on the spot.

0:15:36

"Sonar, ping as we ascend." I know that Alfa can't be far from here. Suddenly, sonar reports a submerged contact 1.8 miles from us. I'm certain it's the Alfa. "Launch four more!" At this range, the torpedoes will make short work of the Russians.

From: Kpt. Hilmanov

Subj: NATO Convoy Intercept

0:00:30

As the convoy draws near like baby sheep, the wolves lie in wait. Our comrades aboard the SSGN are nearby, ready to launch a crushing assault on the imperialist supply ships. With our weapons armed, we rise to 150 feet to locate the surface ships.

From our analysis, we know that the convoy is composed of five cargo ships under the protection of two Oliver Hazard Perry frigates. Even without their sonar signatures, the frigates are easily distinguished from the cargo ships by their courses. The frigates conduct searches. The sonar officer also reports a 688 attack submarine at 12.6 miles.

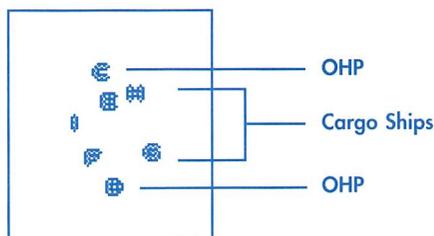


FIGURE 24: CONVOY LOCATIONS

The American submarine is moving toward our comrades aboard the Oscar. We shall have to come to their aid. Fortunately, we are almost completely in the 688's baffles. There's little chance that the Americans will hear us approaching.

"Increase power to 75%," I shout. As we draw near, the Americans launch weapons at the Oscar. I listen with grief as their torpedoes rip into our comrades' hull. There was no way we could have gotten there fast enough.

0:06:38

We lose contact on the 688. "Use active sonar," I shout. The Americans have already detected us and are heading our way. I admit their sensors are good. I also admit (with some humility) that our submarines are too noisy at any speed greater than 50%. But we can absorb several hits from their torpedoes, while their thin hulls will only withstand three, perhaps four of our deadly 533 mm torpedoes. Their great advantage is stealth, so as long as we have them targeted, the advantages are all ours!

With the target less than six miles away, we launch three torpedoes. Within a minute, all three hit. We ping: the American sub has collapsed like an empty cola can! Unfortunately, our comrades aboard the Oscar have met the same untimely fate. The success of this mission now lies entirely in our hands.

0:10:24

We rise to periscope depth and target the ships. We should destroy at least one of the frigates before attacking the cargo ships. The navigator sets a waypoint on the frigate to the north. When we reach the waypoint, we will be directly behind the frigate, where we will stand little chance of being detected.

"Dive to 800 feet and bring us up to FLANK speed!"

**0:18:00**

We've reached the waypoint. I instruct the helmsman to cut the engines while the diving officer brings us up to periscope depth. We only stay at 20 feet long enough to fire three torpedoes at the frigate. We dive back down to 900 feet and resume FLANK speed. We will now keep cargo ships between ourselves and the other frigate. The frigate will not be able to touch us because her own ships will be in the way!

0:23:50

We cut engines and rise to 20 feet to find cargo ships all around us. This is going to be a big cherry pick! We target one cargo ship at less than a mile, and another at two miles. We send them two torpedoes each and dive again.

0:29:23

As we rise again, only one cargo ship is at a reasonable distance. We fire two at her. I raise the periscope long enough for the navigator to set a waypoint near the last two cargo ships. We dive once again to a safe depth.

0:31:40

Cutting the engines, we rise and target the last two cargo ships. We launch two torpedoes at each of them — they shall soon be big playgrounds for fish. The last frigate has a good idea where we are and is heading for us. The navigator sets a waypoint midway between the frigate and ourselves and we dive back down to 900 feet.

We will now switch strategies again — we will use stealth instead of speed. "Helmsman, give me 25% power. Torpedo Room, stand by."

0:37:30

We reach the waypoint and rise just far enough to target the frigate — there's no need to go to periscope depth and beg for a counterattack. We fire our last two torpedoes. We can now hope our return to port is uneventful.



HIT AND RUN

From: Cpt. Rex Breen, USN

Subj: Missile Strike

0:00:05

I find myself unconsciously muttering “suicide mission.” We passed so many warships and submarines on our way into the Baltic Sea that I have this uneasy fear that every ship in the Baltic fleet is between us and our only escape route. The navigator has noted the kinds of ships we passed and estimated their current locations:

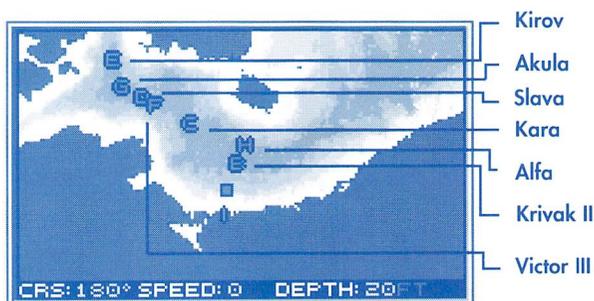


FIGURE 25: MAP OF LOCATIONS

We are going to become the most hunted vessel in the world as soon as we launch these missiles. My sonar officer already hears a Krivak II guided missile frigate approaching us from the north. Well, even if it's short, it'll be exciting.

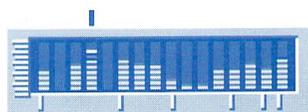


FIGURE 26: SIGNATURE, KRIVAK II FFG

I don't want to be launching while standing still, so I order the helmsman to set the engines on 1/3 and put us on course away from the coast. If we don't get off to a running start, we will literally be *sunk*.

While the torpedo crew arms all missile and torpedo tubes, I raise the periscope to get the bearings we need to launch the cruise missiles. Making missile attacks with the periscope raised is ridiculous — we might as well hoist a flag up it and blast the national anthem — but this is the only way we can get the missiles off. Orders are orders.



0:00:40

From the periscope, I launch each missile as soon as it's armed. We launch the last missile just as the Krivak targets us and drops anti-submarine missiles around us. Perfect timing.

"Release noisemaker!" I yell. "Cut engines and dive!"

As we dive, the sonar officer shows me the signature of another contact he's just picked up: a Kara class missile cruiser:

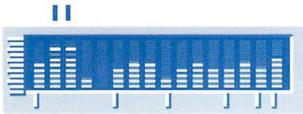


FIGURE 27: SIGNATURE, KARA CLASS CG

We don't want to tangle with this ship on its own terms. It would be better to pass beneath it without a whisper.

0:02:45

As we bottom out, the crew looks at me expectantly: will we fight or flee?

"Full power," I command. "We're going to make a run for it, but it's going to be a deep run."

If we can make it to deep waters, we can dive below the lowest thermal layer and make our escape. Then we can engage the Soviets on our terms, not theirs.

0:25:24

We've made it more than 2/3 of the way. The sonar officer has just reported a submerged contact: an Akula. "Akula" in Russian stands for "shark", and it's aptly named. One of the newest Russian attack subs. Quieter, better sensors, the works. The rational part of me tells me to just shake this — forget about taking him on. The submarine captain in me wants to see what this boy's got. For the moment, the rational part of me wins out. We cut the engines and head for 150 feet.

Unfortunately, things aren't much safer near the surface. The sonar officer reports a Kirov at 11.4 just north of us. To the south, a Slava is moving toward us. These ships acting



together could saturate the water with torpedoes. I'd rather face a single submarine, even an Akula, than attacks from ships that are out of torpedo range. We'll dive back down to 700 feet.

0:32:56

The Akula's back. More than likely, he has contact on us as well. If I knew his depth and course, I might know if it's me he has his sights trained on! I'm going to try to give him another shake by cutting the engines and heading back to 150 feet.

0:33:34

At 150 feet, we spot the Kirov at less than two miles away! Call it suicidal, but it seems a crime to let a target this close wander away! We'll send four torpedoes up its screw and dive to 700 feet.

0:37:09

All four torpedoes hit! Someone has apparently taken an interest in our handiwork: the sonar officer reports a Victor III somewhere to the west.

"Launch three torpedoes!" I shout. If the Victor isn't in range, the Akula probably is. In any case, I'd rather get off the first shots and put *them* on the defensive!

We briefly target the Victor at less than four miles! The torpedoes hit him before he can even say "Captain Rex Breen!" Unfortunately, this kind of bravado has attracted the attention of the Slava we targeted awhile back — the sonar officer has just reported missile launches. I'm beginning to see how this works: you sink a few of their ships and in a flash someone will show up demanding your blood. We launch three torpedoes at the Slava and release a noisemaker before diving deeper.

0:41:01

We've got contact on the Akula, to the north. His bearing is changing quicker than ever — he must be very close. Suddenly he disappears. He could be about to send a couple torpedoes up my screw.

"Ping him!" I shout. He's still out there, only in back of us now. Of course! He sailed right over us!



"Weapons Control, launch three torpedoes and direct them toward the contact, then set them on a search pattern."

0:43:18

Sonar reports that at least two torpedoes hit the Akula. We could play this game forever, I decide, but pretty soon we'd run out of torpedoes. Or noisemakers. And then their torpedoes would start connecting. We launch one more torpedo just to give them hell and dive deeper, kicking the *L.A.* into STD speed. Copenhagen calls.

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