

Jam Dive !!

by James Fasino



Class and type: Sturgeon-class submarine
Displacement: 4,010 tons light, 4309 tons full, 299 tons dead
Length: 89 m (292 ft)
Beam: 9.7 m (32 ft)
Draft: 8.8 m (29 ft)
Propulsion: S3G Core 3 reactor with a S5W Steam Plant
Speed: 25 knots
Complement: 14 officers, 95 men
Armament: Four 21-inch (533 mm) torpedo tubes

There I was - a 19 year-old Navy seaman, fresh out of submarine school, standing in the control room of a U.S. Navy submarine, at sea, somewhere off the east coast of Florida. I, along with my two shipmates, stood ill at ease, staring up at Captain Kurk as he stood authoritatively on the periscope stand. He had a reputation for being a bit "off", but his crew still loved him.

Rumor had it that he'd attempted to roll this submarine on its side by repeatedly executing submerged, high-speed turns at flank speed. This, of course, is an engineering impossibility, but he did manage to get it to lie on its side at about a 60-degree angle for a few seconds.

"You all know what to do in a jam dive, don't you?" he asked.

"Yes, sir," we all replied in unison. The three of us had been assigned TAD, "Temporary Assigned Duty," aboard this 637 Sturgeon Class, Nuclear Fast Attack Submarine for a three week training run to Port Canaveral, this, while our submarine was still under construction at the General Dynamics Electric Boat shipyard in Groton, CT.

The sub's mission on the trip was to execute daily "exercise" torpedo firings on the Navy's test ranges off the coast. Our purpose for being aboard was to receive advanced, practical training as helmsmen/planesmen, in particular as related to recovering from various emergency scenarios, one of which, and the most feared, is a jam dive. This is when, due to hydraulic or electrical failure, the sub's control devices, which are similar to those on an airplane, become jammed in the full dive position. If this occurs at speed, it can send the sub into an uncontrolled dive to the depths. If unable to recover in time, the sub and its crew will be crushed by tons of thousands of pounds of sea pressure when they exceed "designed collapse depth," also known as "crush depth."

"OK then," said Kurk, "each one of you will take a turn at the helm and stern planes. I will order ahead flank speed and the stern planes to be put into full dive. However, you will not react, whatsoever, until I give the order... 'jam dive!' Is that understood?"

"Yes sir, captain!" again in unison.

This would be what's known in submarine jargon

as "practicing angles and dangles." Submarine crews actually love it, except for the cook, that is, because the dishes, pots and pans fly all over the galley and then come crashing to the deck. Afterwards he and his gang spend hours cleaning up the mess.

"You'll be first!" said Kurk...pointing in my direction.

"Me, sir?"

"Yees...you, seaman! Now go and relieve the helm."

"Aye, aye, captain!" I said and then proceeded to walk over to the dive station.

"Permission to relieve the helm?" I asked.

"Permission granted," said the Diving Officer.

The helmsman looked up at me from his seat and said, "We're steering course zero-two-zero. Our speed is ahead two-thirds. We have a two-degree up angle on the bubble and our depth is 200 feet." I repeated the info back to him verbatim so that he knew that I understood fully.

"Ready?" he said.

"Ready," I said.

He unbuckled his seat belt and then, while keeping one hand on the wheel, slid out of the seat and stood up. Quickly, I slid into the seat behind him, buckled up, and grasped the wheel with both hands. Then he let go of the wheel.

"Diving Officer of the watch, the helm has been relieved," he reported.

"The helm has been relieved. Aye, you may go below, sailor."

I had done this dozens of times on a training simulator at submarine school, but this was my first time while piloting a real submarine. I checked my gauges. The depth gauge read 210 feet. I pulled up gently on the airplane-like stick to try to compensate. The gauge clicked to 197.

"Mind your depth, sailor!" said the Diving Officer.

"Aye, aye, sir," I replied. Generally, you're expected to hold depth within two feet and course within one degree in either direction. Since I was new at this, they were watching me very closely. Nothing less that

perfection was acceptable!

"Ahead flank," ordered Kurk.

"Ahead flank, aye," I answered. I grasped the knob on the Engine Order Enunciator and clicked it once to Ahead Standard and then again to Ahead Full and then again to Ahead Flank. Soon the response indicator rang and the answer arrow clicked ahead flank telling me that the throttleman in the engine room had gotten the change in speed order and was responding with more speed. "Answers ahead flank, sir!" I called out.

"Very well," came the response.

I felt an increased vibration in the seat of my pants as the huge prop propelled our 4200 tons of submarine through the water at increasing speed. I watched the speed indicator inch up past 24 knots. Now, we were hurtling through the water at well over 25 miles per hour...in the dark with only our sonar to tell us what might lurk ahead!

I tensed in anticipation and my knuckles paled as I grasped the wheel tightly. Briefly, my thoughts drifted back in time to a dark New Jersey highway when my hands gripped a different steering wheel...that of my '66 GTO careening down the road, at high speed, side by side in a drag race with my buddy in his '68 Chevelle. It was a long stretch in a short time span from that scenario of an irresponsible, street-racing kid to this of a trained young sailor at the helm of a nuclear submarine. That was just the year before, but it seemed like a lifetime ago.

My heart was pounding; my muscles were tense. I felt a hand on my shoulder as the Diving Officer leaned forward and said in a friendly voice, "Relax, sailor."

I loosened my grip slightly...took a deep breath. Then came the order!

"Full dive on stern planes."

"Full dive on stern planes, aye!" came the answer. I peeked over towards the indicator and the stern planesman sitting next to me skillfully pushed his control stick forward till the indicator showed full dive.

The stern planes are two huge wing-like devices at the rear of the sub that work similarly to the flaps on an airplane. When they're moved either up or down,

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especially at high speed, they have an immediate and enormous effect on the attitude and depth of the submarine. There is another, smaller set of planes on the sail, or bridge structure, called the sail planes, which I controlled, as well as the rudder, to help fine-tune the "boat's" depth.

Things began to happen rapidly then. The sub nosed down abruptly. Suddenly, I found myself hanging by my waist from my seat belt, struggling to hold the stick up against the gravitational force. I put my feet up on the control panel, which had been in front of me, but now was below me, in an effort to brace myself. Guys around me were swinging from the overhead piping, their legs dangling in mid-air!

I glanced at the depth gauge. The feet were clicking by so fast that I could make out only 100-foot increments. We passed 400 hundred feet and were still descending rapidly! Although it had only been a few seconds since the full dive order, it felt like an eternity had passed. "What is this guy waiting for?" I thought.

Then...mercifully..."Jam dive...jam dive!" I heard Kurk command. "Left full rudder. Full rise on the sail planes. Full rise on the sail planes. All back emergency."

Beads of sweat had formed on my forehead as I struggled to reach for the Engine Annunciator. Simultaneously, I threw the rudder to full left as I struggled with

all my might to pull up on the control stick to put the sail planes in full rise. I rang All Back Emergency and got the response. I could hear the pots and pans crashing below us in the galley...the cook was screaming!

"Stern planes are in full rise. Bow planes are in full rise. Answers All Back Emergency. Rudder is left full."

"Aye...Aye...Aye...Aye..." Kurk responded coolly.

I was hanging on for my dear life! The depth gauge read 650; the bubble indicator was at 85 degrees down...we were in a high-speed dive, barreling straight down in the dark depths of the sea. I felt the heavy rumbling in my seat. The prop was beginning to bite the water to reverse our descent. I was being pulled down even harder against my seatbelt now as the boat began to slow. My breathing was heavy; my arms and legs ached from the strain.

"Passing 725 feet," said the Diving Officer.

"Seven twenty-five, aye!" The entire boat was shuddering under the stress. The hull was moaning under the weight of tons of increasing sea pressure around us. We were starting to slow; the depth gauge was becoming more readable.

"Passing 800 feet and slowing, captain," said the Diving Officer.

"Eight hundred feet, aye," said Kurk.

The bubble gauge showed that we were at a 40-degree down angle now. I could lower my feet to the deck

again. My entire body was trembling; sweat was pouring from my forehead and my clothes were damp with perspiration from the stress of it all, as well as the sheer physical exertion.

We leveled off at 350 feet. I was drained physically and emotionally, yet I was exhilarated. "Wow! That was great!" I thought. "I can't wait to do it again."

"Rudder amidships, Kurk ordered. "Level all planes. Ring up ahead one-third. Diving Officer, take her to 200 feet." All orders were answered and executed.

Neeext!" said Kurk, reminiscent of a chain-style restaurant maitre d'. For him this was just another day at the office. For me...it had been the most thrilling day of my young life!

I was relieved on the helm by the next trainee and then took my turn on the stern planes. The speed was increased to flank.

"Full dive on the stern planes," came the order.

"Full dive on the stern planes, aye!" I answered. I eased the stick forward smartly...the bow angled down sharply. This was the start of another wild ride. Already I could hear the cook screaming, and everyone in the Control Room was smiling.

"It's been more than 35 years now, but I will always remember my first....."Jam Dive."

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