

# The Computer is Down

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A Sea Story

**Fred Nickols**

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This is a story about war and technology and morals and ethics and the men who fight in war and, most of all, it is a story about the rarely discussed power of the knowledge worker.

## *The Computer is Down*

Nick Taylor presented the appearance of a man standing at a bar. Forearms crossed in front of him, he was leaning forward on the lifeline (a definite "no-no" which he ignored). His left leg was locked at the knee and for balance his right foot was stuck in the snakey (another "no-no" which he also ignored).

Nick Taylor ignored a lot of things – rules, regulations, officers, orders, constraints and other people mostly. Right now he was ignoring his health. He was smoking a cigarette, one of those stubby little *Camel* cigarettes that practically no one smoked anymore.

Nick had been smoking *Camels* since he was eleven years old. What started out as an experiment had become a life-long habit. He and "Sonny" van Winters had been experimenting with cigarettes in an empty lot next to the building his grandmother owned. She caught them. She sent Sonny on his way and presumably to show "Nicky" the error of his ways, she made him smoke an entire pack of *Herbert Tareytons* – her brand. She made him inhale too.

Her strategy backfired. By the time he finished the pack of *Tareytons* Nick's lungs had adjusted to the harsh task of inhaling smoke, tar, and nicotine and, at the age of eleven, he was well on his way to becoming a confirmed smoker. She taught him a lesson, all right. She taught him how to smoke.

It wasn't long before Nick settled on *Camels* as his brand. For years, he attributed his choice to the advertisements showing a man claiming he'd walk a mile for a *Camel*. As a boy, he thought those ads were testimony to the quality of the tobacco. Lately, however, he was beginning to think that he'd been had at an early age by some Madison Avenue ad jockey – that those ads really represented an artfully contrived appeal to the *macho-man* lurking inside him. Not all con-men prey on little old ladies.

Most people, even sailors, smoked filtered cigarettes now. Not Nick. He put condoms and filter cigarettes in the same class as taking a bath with your socks on. As a result, he'd had gonorrhoea twice and was probably going to die from lung cancer. When he thought about it, which was often enough, he shrugged it off, telling himself he didn't care; he had to die from something.

Besides, his *Camels* provided him with a private and perverse little pleasure. Whenever someone tried to bum a cigarette from him, he took great delight in extending his small pack of "deadly little devils" and watching as the moocher, reaching for the proffered pack, would belatedly identify what was being offered, then withdraw the reaching hand, declining the offer, and invariably saying, "Uh . . . Gee . . . Thanks anyway." Very few people tried to bum cigarettes from him anymore.

Nick Taylor's stiffly-starched cotton khaki uniform had not yet succumbed to the heat and humidity of the day. The creases in trousers and sleeves were still sharp. His chestnut-brown, plain-toed shoes still held their spit-shined gloss, compensation for the fact that the shoes themselves were non-regulation – a style known as "military buckle." His collar devices, small fouled anchors with the letters "USN" across the shank, identified him as a chief petty officer.

Chief Petty Officer Nicholas W. "Nick" Taylor was the chief fire control technician in charge of the system that controlled his ship's five-inch, 54-caliber gun mounts. His ship was a guided-missile destroyer he'd put in commission almost exactly four years earlier.

Nick had taken up his barroom stance on the main deck, just outside the starboard hatchway leading to the mess decks. He was reflecting on the morning's work and the way the war in Viet Nam was being conducted. It was August of 1968.

The noon-hour was almost over. In a few minutes it would be 1300 – one o'clock in the afternoon to civilians. The lunch-hour break in hostilities would be over and it would be time to return to General Quarters.

Jesus, he snorted, the war was being run by the clock. Shore bombardment from 0800 to 1130, then time out for lunch. At 1300 back to shore bombardment. It was almost ludicrous.

He tried to conjure up an image of John Paul Jones, addressing the Continental Congress, delivering his famous request for funding: "Give me a fast ship, for I intend to go in harm's way." If old JPJ was here today, he'd probably say, "Give me a fast ship, for I intend to get the hell out of here."

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Nick Taylor was arguably one of the best fire control technicians in the fleet. He was the inventor of the extended-range procedure soon to be in widespread use throughout the fleet. For this feat, which added a full twenty-five percent to the effective gun range of most modern destroyers, Nick received the Navy Achievement Medal. His fire control officer received the Navy Commendation Medal (a "higher-ranking" medal, of course, because his fire control officer held a higher rank.) And, his commanding officer at the time received the Bronze Star.

All this led Nick to observe that recognition, like shit, seemed to flow downhill. Unfortunately, as he also observed, very little of the recognition seemed to make it to the bottom whereas most of the shit seemed to get there without too much difficulty.

But, more important to Nick than the medal or the shit that flowed incessantly downhill in the Navy was the fact that his gun fire control system hadn't once broken down under the stress of providing gunfire support for troops ashore over sustained periods of time. As a result his ship was the only one to date to complete an uninterrupted tour on the gun line, a fact that no doubt weighed heavily in the decision to award it and its crew a Navy Unit Commendation.

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Abandoned by his father, handed off to his grandmother by his mother, and frequently, severely and indiscriminately beaten by family, friends, teachers and the police, Nick Taylor had at a very early age batted down his personality hatches and withdrawn within himself to live an armor-plated existence. No one could get to him anymore and he gave short shrift to those who tried.

Nick Taylor was far from being the first or the last of his particular class of human beings, but he was the perfect exemplar of I – he was a *dreadnought* – small, light, fast, and possessed of considerable destructive power. He was, when he chose to be, a real son-of-a-bitch. Everyone knew it and everyone gave him a wide berth.

Inside the armor-plated shell sat an eight year old boy, fiddling with the knobs and switches that drove the thirty-year old man. Inside was "Nicky" – alert, curious, intelligent, sensitive, and easily frightened, especially by brutality. Outside was "Nick" – cold, quick, calculating, demanding, and yet strangely indifferent. Detached, uninvolved, going through the motions, playing the game. To Nick everything was a game.

One of Nick Taylor's favorite games was tweaking the nose of the military establishment. Nick didn't simply flirt with disaster, he courted it.

He'd gone to Captain's Mast once, as a third-class petty officer, an E-4, already on a suspended bust for the same offense: over the hill by a few hours.

He'd been ably defended by his chief, his division officer and his department head. Even the executive officer had put in a few good words. But Nick knew his goose was cooked. So, he was determined to enjoy himself – at the captain's expense.

When it came Nick's turn to speak on his own behalf, the commanding officer, a lieutenant commander, who fancied himself a man who ran a tight ship but who was instead viewed by the crew as simply one more "prick," asked Nick why he was late getting back to the ship.

"Well, captain," Nick replied, "I woke up at about 8 o'clock. I was already late and the last time I was up here you told me that if you saw me again before my suspension was up, you were taking my crow. I know you're a man of your word and I figured as long as I was gonna get busted, I might as well enjoy myself. So, I took a leisurely shower, shaved, got dressed, went out and got myself a nice breakfast and then walked around town for a while."

The captain, almost apoplectic, exploded.

"What? You were up and about at 8 o'clock. Why didn't you come back to the ship right away? You could have been back here by 0900 instead of noon! I could have taken that into consideration. Your duty was to return to the ship immediately. Do you understand that?"

The eight year old boy inside Nick was trembling, fearful of another beating. Struggling to keep the boy in check, Nick replied, "Yes sir."

"Taylor, you leave me no choice. You've tied my hands in this matter. Your suspension is vacated. You're now a seaman."

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With judgment rendered according to prediction and the ritual over, Nick saluted smartly and went to stand in ranks with the rest of the miscreants at captain's mast that day. There were several of them, signs that the captain's reign wasn't going well. It wasn't, and it would end sooner than the captain believed possible.

That ship, Nick's first, was an old WWII Fletcher-class destroyer, laden with every conceivable battle-efficiency award a ship could win, many of which had been won for several consecutive years and three of which were due for "gold" status, meaning they had been won for five years in a row.

The ship would put out to sea in a few weeks to undergo its annual competitive exercises and it would fail them all. The captain would be relieved shortly thereafter, and the crew would lament the high cost of getting rid of such a prick – the loss of their ship's status as the best-performing destroyer in the Pacific Fleet. Nick would apply for and receive a transfer.

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The *Wylie* was lying to, approximately ten thousand yards off the de-militarized zone – the DMZ – the little strip of no-man's land that attempted to separate what couldn't be separated: North and South Viet Nam. He felt like a cop who had been called in on a domestic quarrel. Cops, however, didn't make it a practice of blowing away husband and wife in order to resolve the dispute. Unless, of course, they opened fire on the cop.

That's what had happened several days earlier, when the *Wylie* was on search-and-rescue (SAR) up on Yankee Station in the northernmost part of the Gulf.

The *Wylie's* assignment while on SAR was to rescue downed pilots. A jet jockey off the *Midway* radioed in that his plane had been hit during a raid and he was headed for Yankee Station to eject. The *Wylie* altered course and began its speed run to the area where the pilot would come down.

They were too late. The pilot ejected safely but he had the misfortune to land in the midst of a small North Vietnamese fishing fleet, a collection of twenty-odd sampans. Anxious no doubt to exact some small measure of retribution for the damage the pilot and others like him had inflicted on them, the occupants of the sampans were using the pilot for small-arms target practice when the *Wylie* arrived on the scene.

Too late to save the pilot, the skipper slowed the *Wylie* to a snail's pace, got on the JC circuit and spoke directly with Nick Taylor in the plotting room. The ensuing action was still fresh in Nick's mind.

"Nick," the skipper had said, "we didn't make it in time. The pilot went down in the middle of a group of fishing boats and the little bastards are using him for target practice. Can you give me some air bursts overhead?"

"You betcha skipper. How high do you want 'em?"

"One thousand feet."

"How about five hundred?"

"That's even better."

"Willy," Nick said, turning to the young seaman on the phones with the gun mounts, "tell Mount 51 to clear its hoists, load in Able-Able-Common and turn on the fuze-setter. And tell 'em to turn and burn, we ain't got much time."

"Gun Control, Gun Plot," Nick said into his own phones, "I'm loading in Able-Able-Common and I'll shift control of the gun battery to you as soon as everything's set up."

"Gun Control, aye. We're ready to go."

"Jimbo," Nick inquired of the radar operator sitting at the console in the corner of the plotting room to his right, "you got the range?"

"Yeah, but it's tough to hold, chief. There's lots of little blips and the damn radar keeps jumping from one to the other."

"Okay. Don't try to lock on. Just keep the range gate in the center of the blips."

"Gun Control, Gun Plot. You'll have to keep on the target manually."

"Gun Control, aye. Will do."

"Frankie, set in 500 feet on the height dial."

"Set."

Flipping the switches on the computer to their direct fire positions, Nick started the time line and the computer.

"Mount 51 reports hoists cleared of VT-Frag, Able-Able-Common loaded, and fuze-setter on."

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"Okay, Willy, tell Mount 51 to train out, match up, and shift to automatic."

"Mount 51 reports matched up and shifted to automatic."

"Gun Control, Gun Plot. Plot set. Solution set. Mount 51 is in automatic and you have control of the battery."

*Whoomph.* The ship shuddered from the recoil.

"Gun Plot, Gun Control. Left two mils."

Frankie, the computer operator, inserted a two-mil left spot.

*Whoomph* again, six times. Then six more times.

In less than ten minutes it was all over. Tattered shreds of wood, bamboo and canvas were all that remained of most of the little fishing fleet. That, and bodies and parts of bodies. Few of the sampans escaped and none without damage.

Afterward, the chief boatswain's mate, a burly, barrel of a man known to all as "Boats," took the gig out with an armed party and using a grappling hook, snagged the pilot's chute and pulled his body to the surface.

When "Boats" saw what the small-arms fire and shrapnel had done to the young man's body, he jerked off the pilot's dog tags, cut the few remaining intact cords, and let what was left of the pilot's body sink to the bottom of the Gulf's muddy brown waters. It was amply weighted. The pilot's mother would never have to see what had been done to her son.

"Boats" told the first lieutenant that the parachute cords had been damaged by the small-arms fire and gave way before he could grab the pilot's body. No one asked the Bo'sun how he managed to get the pilot's dog tags.

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Now the *Wylie* was back down south, providing gunfire support to troops ashore. The center of the *Wylie's* assigned area was the DMZ – the de-militarized zone. That, Nick thought, was a hell of a name for a piece of ground that was anything but de-militarized.

Looking skyward, he marveled at the clear, blue sky. From horizon to horizon, not a single cloud marred the heavens. It was an unbelievably bright day. He hadn't seen anything like it since the boyhood summers spent on his uncle's farm in Iowa.

He liked those summers on the farm. For years, those summertime stints on the farm offered him his only opportunities for seeing his brother.

Their dad ran off when Nick was four years old, just before the Japanese attacked Pearl Harbor. His brother was three then and his sister, was two. Their mother wasn't up to the task of raising three young children plus working full-time at a glove factory, so Nick had been sent to live with his grandmother. His brother went to live on the farm, with an aunt and uncle. And Nick's sister stayed with their mother.

So much for familial love and devotion, he thought. His sister, along with his aunt, committed his mother to the state mental institution last year. For her own good, of course. But, then, wasn't that always the case?

Shifting his gaze downward to the waters of the Gulf of Tonkin, he chuckled as he realized they too reminded him of Iowa. They looked the way the Mississippi looked right after the channel was dredged. He suspected he and those Vietnamese fishermen he wiped out might have been able to swap a "river rat" story or two – if they'd had a chance to talk.

Off in the distance, all he could see of the low, flat, coastal plains of the DMZ were two thin ribbons of color, one a light tan, the other a dark green. The beach and the jungle. He wondered what was over there.

Then he decided he didn't want to know. In a few minutes, the ship would be going to General Quarters and he would be busy blowing up whatever was over there.

The body counts that sometimes came in after the ship's shore bombardment missions were beginning to bother him. The first one was burned permanently into his memory: one hundred and ninety-six. Sounded more like a bowling score than a body count. Not only was his personal body count rising, so was his discomfort with the war in Viet Nam.

He was nearing the end of his third tour of duty on the gun line in Viet Nam. Three four-month tours, one each for the past three years.

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Even allowing for the likelihood that the body counts were inflated to provide the brass-brains and the civilian clowns in the Pentagon with pseudo-statistical evidence of success, by his reckoning, he was personally responsible for the deaths of hundreds of human beings.

Yet, the size of his body count didn't eat at him. That worried him, too. Was he some kind of subhuman? Perhaps it was the enormity of his sin or crime that enabled him to examine it so objectively. Maybe he didn't have any feelings. Maybe he was past feeling.

No one talked about the magnitude of the death and dying, least of all him, but deep down inside something was festering and it bothered him.

Most of the killing, on his part at least, was quite impersonal. It was long-distance killing, like dropping bombs. He was a technician who controlled gun mounts, not a rifleman taking aim at another human being.

The fact of the matter, however, was that he was far deadlier and more destructive than a rifleman. In the strategy and structure of modern or technology-dependent warfare, he could indeed see a clear and present danger.

For technicians like himself, it was a simple matter to divorce a man's actions from their consequences. Safe on board his ship, he could fire his guns and not have to see or hear the explosions, the destruction, the dead, the dying, and the maimed. He did not have to listen to their moans and groans, screams and shrieks, and whimpers. And so he could pull the trigger without having to deal with what pulling the trigger meant for others. Dead people became body counts.

He could see in technology-based warfare, the beginnings of a wide-scale separation between a man's acts and their consequences that was not possible when the combatants had to square off face-to-face, eyeball-to-eyeball. The more warfare became technology-driven and staffed and supported by technicians instead of troops, the farther the average soldier or sailor was removed from the hell of war. The danger he saw was that technology might make war tolerable for the technicians. Then there'd be hell to pay.

He knew that separating people from the consequences of their actions made possible irresponsible behavior on their part. He couldn't begin to count the number of times people had gotten his ass off one hook or another and he knew full well that in the long run they had done him no favor.

Indeed, separating a man's behavior from its consequences made war itself possible. Thus, he knew that if ever he gave up imagining the consequences of his actions in Viet Nam, unseen though they were, he was doomed. So he was very careful not to wash his hands of the responsibility they held or of the blood that was on them. He knew that if he did, any and all hope for his soul was lost. He might as well enter Dante's Inferno.

At a more mundane level, what was bothering him most was that the year before he had unwittingly sent three young Marines to their deaths.

During his second tour on the gun line, he suggested to the weapons officer that if they could get a beacon – a transponding device his radar could track – set up at known coordinates in the DMZ, the accuracy of the *Wylie's* gunfire could be greatly improved.

A week later, a tough, gruff old Marine gunnery sergeant, straight off a recruiting poster, and three teen-aged Marines were on board the *Wylie*, meeting with the officers to pick a location for the beacon. The gunnery sergeant and the three teen-agers had drawn the unenviable assignment of physically lugging the beacon into the DMZ, setting it up, and of then making their way back out.

When Nick learned that the Marines would have to "back-pack" the beacon into the DMZ, he tracked down the gunnery sergeant to apologize.

"Jesus Christ, gunny," he said, "I didn't know you guys were gonna have to lug that fuckin' thing in there or I wouldn't have asked for it."

The gunnery sergeant shrugged. "That's what we get paid to do, chief. That's our job."

"Bullshit, gunny! That's maybe true for you and me. We chose this way of life. We're pros. These fuckin' kids didn't ask for this shit."

Sure enough, once the beacon was installed, about a week later, the accuracy of the *Wylie's* gunfire improved considerably. But the improvement lasted only two weeks – the amount of time it took the VC to locate and disable the beacon.

Only the gunnery sergeant came back. All three of the young Marines were killed; one on the way in, the other two on the way out. Cost: three lives. Benefit: two weeks of improved gunfire. Was it worth it? Nick didn't think so, but that wasn't his call.

He joined the Navy in part to stay out of a factory – and in part to stay out of the ground forces. Slightly more than five-feet six-inches tall, and weighing barely 150 pounds, he figured he didn't have a snowball's chance in hell

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of staying alive in hand-to-hand combat. The Air Force was out too. No way was he going to fall 30,000 feet to his death. Besides, his buddies had all joined the Navy.

Nevertheless, he regularly felt guilty that his part of the war was so clean and that for others it was so damned dirty.

He felt especially guilty that the dangerous assignment those young Marines undertook was the result of his stupid, unthinking, technician's request for a beacon. He had given no thought to what it would take to get a beacon in there or he wouldn't have suggested it.

He made it a point to ask the three young Marines when they were on board the *Wylie* if they needed anything from the ship's store – cigarettes, soap, socks – anything at all.

They shook their heads no, saying those items were in abundant supply where they were stationed.

"This ain't World War II," one of them said.

But, after thinking for a moment, one changed his mind.

"Gedunk. Can you get us some gedunk?"

"What's 'gedunk'?" Nick had asked. It was not a term he knew.

The young Marines laughed. "You know, candy bars, gum, lifesavers. Anything sweet."

Nick rounded up the ship's serviceman, browbeat him into opening up the ship's store, and bought every piece of candy in it. The "gedunk" filled three small overnight bags. Those too he had to buy. Nick gave one to each of the three young Marines.

The gunnery sergeant, examining his young cohort's loot, had laughed, saying, "You better watch out, chief. Them boys' mommas are gonna be all over your ass for fuckin' up their teeth."

More than their teeth got fucked up, thought Nick.

Somewhere in the back of his mind was a small voice that kept saying something wasn't right about this dirty little war. He was sure it wasn't his conscience. He doubted he had one of those or he wouldn't have been there in the first place. He thought it was his little voice of reason.

What bothered him about Viet Nam was the lack of a "cause." There was no Pearl Harbor, no Nazi aggression or atrocities, no Lusitania, no "Kaiser Bill," no Adolf Hitler, no Tojo. No nothing. The way he figured it, either the propaganda boys were muffing their assignment, or there was no justifiable cause for them to pump up.

He could see no threat to the United States or its allies from Viet Nam. For cryin' out loud, it was just a bunch of Vietnamese squabbling among themselves about who was going to run their show. Why the good old US of A had to stick its nose in, Nick didn't know.

From time to time he wondered what a small-town boy from Iowa was doing over here blowing up people, goats, dogs, huts, boats, and real estate. But, most of the time he didn't think about it at all.

He told himself he didn't give a damn about the adults. Especially in situations like the one with the downed pilot. He claimed to despise most adults anyway, including himself at times. The truth was, he feared them, and he feared even more the prospect of becoming one of them. But he worried about the kids.

Sometimes, when he had the stomach for it, he wondered how many kids he had killed. How many kids had been playing hide-and-seek or whatever games Vietnamese children play and suddenly had their games and lives snuffed out by the high-explosive projectiles from his ship's five-inch guns? He wondered how he'd explain that on judgment day. He wondered if there would be a judgment day. He hoped so. Someone's ass ought to fry for this.

His ruminations were interrupted by the nasal bong-bong, bong-bong sound of the ship's general alarm. There were times when he was willing to swear that there really wasn't a general alarm; it was someone on the bridge, holding his nose, saying "Darng-darng, darng-darng" into the 1MC, the ship's announcing system.

"Now hear this," came the voice over the 1MC, "Now hear this. General Quarters. General Quarters. All hands man your battle stations. All hands man your battle stations. The smoking lamp is out."

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Turning and stepping through the doorway that led to the mess decks, Nick Taylor moved swiftly across the mess decks and down the ladder to the plotting room.

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The watertight door to the plotting room was open, the crew inside awaiting his arrival. Stepping inside, he glanced around, verifying he was the last of those who would need to enter, and then closed and dogged down the door.

Lighting up a cigarette, he pulled open the top drawer of the filing cabinet next to the computer, took out a small tape recorder and set it atop the filing cabinet. The tape on the recorder was almost fully used, so he replaced it with a fresh reel. He then hooked up the recorder to the ship's primary battle command sound-powered telephone circuit – the JC circuit – and turned it on.

If the weapons officer knew he was still taping the JC circuit, he'd probably get a royal ass-chewing, but Nick didn't care, he recorded all missions, and for good reason too.

The taping started out two years earlier as a technician's lark. Nick simply wanted to find out if he could in fact tape the sound-powered telephone circuits. He also planned to tape a few missions for training purposes.

The first time he hooked up the tape recorder, he induced a sixty-cycle hum on the line. That wouldn't do at all. One of the ship's internal communications (IC) men told him he needed an isolation transformer to keep the hum off the line.

Poring through the spare parts catalogs for something he could use and that was also carried on board, he finally settled on a filament transformer, normally used to reduce 115 volts to 6.3 volts to heat the filaments in vacuum tubes.

By hooking the 6.3 volt side of the transformer to the phone circuit and the 115 volt side to the tape recorder, he not only eliminated the hum, he managed to amplify the signal.

The first time he actually taped the JC circuit convinced him to keep on taping it. The ship was providing close-in gunfire support for troops ashore and nearly blew up some "friendlies." When the computer solution was checked, it was found that one set of coordinates was the reverse of what it should be.

The fire control officer at the time blamed the plotting room crew, claiming he sent down the proper coordinates from the combat information center (CIC) and that "Taylor fucked 'em up." Nick knew better. He had a wonderful, "live" recording of the fire control officer giving him the wrong set of coordinates.

When the fire control officer and his boss, the weapons officer, came down to the plotting room to decide who would hang for what, Nick listened impassively as the fire control officer again accused him of screwing up the mission. When the fire control officer ended his ranting and raving, Nick reached over and pushed the play button on the tape recorder. He had already rewound it to the portion of the mission in question.

After hearing the critical part of the tape, the weapons officer dismissed the fire control officer, sending him to his stateroom for what Nick knew would be one hell of an ass-chewing later on.

The weapons officer looked at Nick incredulously, saying, "Jesus H. Christ, Nick! You've been taping the primary battle circuit? I can't believe you're that fucking stupid! Get that goddamned thing off the line and don't ever hook it up again!"

But, as he did with so many orders, Nick ignored the ones just given; he continued taping the battle command circuit. Once burnt, twice shy, was the way he looked at it. If ever again he was accused of screwing up a mission, he damn well intended having his ass covered.

Finished setting up the tape recorder, Nick moved to the front of the computer, where his sound-powered telephone headset dangled from one of the handcranks.

Donning his headset, he looked toward the young seaman perched atop the stable element. On loan from the deck force because Nick's crew was short-handed, the young seaman served as Nick's communications link to the gun mounts and as the firing key operator. The young seaman's job was literally one of pulling the trigger.

"Are the mounts manned and ready?"

"Yes sir," replied the seaman, "Mount 51 and Mount 52 both report manned and ready."

Grimacing at being called sir, Nick depressed the button on the microphone of his headset, and reported, "Weapons control, gun plot. Gun plot manned and ready."

The new weapons officer's squeaky little voice acknowledged Nick's report, "Weapons control, aye."

The previous weapons officer, the one who along with Nick has put the *Wylie* in commission, was gone, deep-selected for promotion to lieutenant-commander and transferred to a guided-missile cruiser. Nice for him, thought Nick, but too bad for the *Wylie*. Too bad for him, too; the old weapons officer had covered his ass on more than one occasion. The new one wasn't that kind.

The old weapons officer was a decent fellow; the new one was a runty redhead with absolutely no respect for enlisted men. He'd once been overheard referring to enlisted men as "brainless brutes and barbarians." Nick had



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once pondered teaching the officious little prick a lesson or two but decided against it. Life was too short for that kind of shit.

Nick Taylor was a young man by most standards, not quite thirty-one years old. For a warrior, however, he was getting along in years. Thirty-one was middle-aged at the very least and dangerously close to being an old man.

Six more years, give or take a month or two, and he could retire on "nineteen-and-six," the navy term for nineteen years and six months of active duty, the minimum service required for retirement.

Actually, he wouldn't really retire, he would transfer to the Fleet Reserve. Official retirement wouldn't take place until he had completed thirty years of service, including his time in the Fleet Reserve.

What a joke, he thought to himself, "retired" at thirty-six, with half-pay and full medical benefits. He was sure there wasn't anything to match it in the civilian world, not even civil service retirement matched the military's.

Cops did pretty good though. His brother-in-law, a detective sergeant in the Los Angeles Police Department (LAPD) could also retire after twenty years of service – but not with much more money and nowhere near the medical benefits. Twenty years in the Navy wasn't such a bad deal; not for a "working stiff" like him anyway.

His prospects, once he retired, were pretty good too. Electronics was a booming business and he would be in a good position to take advantage of it once he got out – if the boom lasted and if he didn't get killed in the meantime. He'd probably get a job in the shipyard or maybe go to work for IBM as a tech rep. If he could scrape up a little capital, maybe he'd open his own TV repair shop.

He'd like to have his own business, like his grandmother. She was a furrier by trade; she made, cleaned, altered, stored, and repaired fur coats. As a boy, he spent a lot of time in his grandmother's fur shop.

He despised her bigotry and he feared her meanness, but he admired her independence and feistiness. He still laughed whenever he remembered the time one of the wealthier ladies of the town brought in a full-length mink coat to have a minor tear in one of the pelts repaired.

His grandmother examined the tear and told the woman it would cost five dollars to fix.

"Mrs. Baines," the woman exclaimed, "that's outrageous!"

"Then take your coat somewhere else," his grandmother had responded, pushing the coat back across the counter.

"But Mrs. Baines, you know as well as I do there's not another furrier within a hundred miles of here."

"Do tell," replied his grandmother, obviously relishing the fact that she had the upper hand in this little transaction.

"Very well," sighed the woman, "I'll pay the five dollars."

"Ten!" his grandmother snapped.

Opening her mouth to protest anew, the woman's brain hurried to catch up with her mouth, causing it to hang open for a moment. Then, brain firmly in control of mouth, the woman said, "When will it be ready?"

His grandmother defined for him the essence of the term "independent." His own independence and feistiness, whether by virtue of blood or adoption, had served him well in the Navy. He paid little attention to the limits and restrictions that served to constrain most enlisted men.

Somehow, through sheer luck he imagined, he avoided being labeled a "sea lawyer" or a "troublemaker." True enough, he was busted at Captain's Mast once, and he was on a suspended bust from first-class when he was promoted to chief, but he'd done nothing really serious, nothing to warrant a court-martial.

The code word that regularly showed up in his enlisted evaluation forms, the equivalent of a performance appraisal in the civilian world, was "idiosyncratic." His self-imposed handicap, the act of a man bound to the task of perpetually testing himself, was a perception of himself as "brilliant but erratic."

Nick was an FT – a fire control technician. The chief who recruited him, a Machinists Mate named Stengel, told him he could guarantee him the electronics field – that he would be an FT or an ET. Stengel was a real bullshit artist. Oh well, so was he. All chiefs were bullshit artists. They had to be in order to deal with the officers – and with each other.

When he asked Stengel what FT meant, Stengel told him it stood for fire control technician. Like many before him and many since, his immediate response was that he didn't want anything to do with fighting fires.

It took some explaining on Stengel's part to convince him that FTs didn't fight fires, they controlled the firing of a ship's guns, and controlling naval gun fire involved working on some very complicated, highly technical systems.

Thirteen years later, that same recruit, now himself a chief petty officer, had his own explanation of what being an FT meant. And he could rattle it off like a canned speech.

## *The Computer is Down*

FTs operate, maintain, and repair complex shipboard weapons systems. They do so under exacting, harsh, and sometimes hazardous conditions. The systems include radars, computers, optical rangefinders, stable elements, and all kinds of mechanical and hydraulic equipment. Some of these fire control systems control guns and others control missile launching systems, including the big ICBMs found on nuclear-powered submarines.

An FT must know about electricity, electronics (vacuum tubes and solid-state), hydraulics, motors, generators, servomechanisms, gyroscopes, optics, ballistics, and more – much, much more.

Most of all, an FT must know, understand, and appreciate the fire control problem.

The fire control problem is essentially a matter of predicting the future position of a target and of accurately positioning a gun mount so that projectiles fired from it will attempt the physically impossible: sharing time and space with the target. Owing to the explosive and fragmentive nature of the projectiles fired by a ship's guns, pin-point accuracy is not required. In the case of the fire control problem, "close enough for government work" is a useful and valid measure of performance.

Solving the fire control problem is no mean feat. Anti-aircraft or anti-missile gunfire has to be delivered from the rolling, pitching deck of a ship moving and turning through the water. The target – especially if it is a piloted aircraft – is like as not taking evasive action so as to be somewhere else when the projectiles arrive.

The fire control problem is first and foremost a problem of change and rate of change in three-dimensional space and several points in time. It is, then, a problem in and of motion.

The mathematics involved in solving the fire control problem include simple arithmetic, algebra (linear, simultaneous, and quadratic equations), solid and plane geometry, trigonometry, and differential and integral calculus.

The factors addressed in the course of solving the fire control problem include the roll and pitch of the ship, the present positions of the target and the firing ship, their individual paths and relative motion, the atmospheric conditions in which the guns are fired, the temperature of the powder in the ammunition magazines, the time between loading and firing, the wear and tear sustained by the gun barrels over time, the velocity of the projectiles leaving the gun barrel, and the aerodynamic characteristics of the projectiles being fired, to name but a few.

Years before, fresh out of boot camp and going through FT "A" school at Great Lakes, Nick, then just a lowly seaman apprentice, was taught and learned how to solve the fire control problem using pencil and paper. Of course, he couldn't solve the fire control problem as fast as the computer could, but he could in fact solve it more accurately. More important, he knew what the computer did, how it did it, and why. He could tell if it was working properly and he could fix it when it wasn't. Nick was no "black box" technician; he knew his equipment inside and out.

What went on inside the analog computer in front of him was nothing less than the complete, dynamic, three-dimensional, mathematical modeling of the fire control problem in real time; a running, continuous, simultaneous solution, not an incrementally calculated one.

The structure of the machine in front of him reflected the structure of the problem it solved. There was no split between "hardware" and "software" – that "basic binary split" would have to wait for the advent of digital computers. For now, there was only hardware, a special purpose computer intended to do one thing and one thing only – solve the fire control problem.

Nick, perhaps as a result of being blessed with considerable ability at free-hand drawing, could envision the fire control problem in his head. With a little imagination, he could even animate it, make it move in his mind.

More important, he knew how that problem was embodied and embedded in the machine in front of him.

Once, when his ship was on its way to WestPac, and ostensibly for the purposes of training his crew but in reality for the sheer joy of testing and displaying his mastery of the machine, he completely dismantled and then reassembled and realigned the Mark 47 computer – much to the consternation of his weapons officer and his commanding officer. It took him one day to rip it apart and three days to put it back together. All breathed a huge sigh of relief when Nick reported the computer was reassembled, realigned, and working just fine.

Stengel, his recruiter, had been right: FTs were the best and the brightest of the navy's enlisted ranks, and FT was undoubtedly the most intellectually demanding and highly-skilled of the navy's enlisted ratings. Nick was fond of regularly reminding his shipmates, "The rest of you bastards don't have any purpose except to get me and my system to where we can do our job; namely, blow the shit out of things."

The plotting room, where the computer was housed, was situated on the port side, roughly halfway between the bow and the stern, and one deck down from the main deck. It was spacious and air-conditioned, not at all like the cramped little sweat-box that served as the plotting room on his first ship.

## *The Computer is Down*

Ships, and the Navy, had changed a lot since he enlisted in 1955. His first ship was an old WWII Fletcher-class destroyer, one of the original "tin cans," and it had a culture to match. There, his current weapons officer's assessment of enlisted men would have been right on the money.

After four years on his first ship he was transferred to a new Sherman-class destroyer where he spent an all too brief eighteen months. To Nick, the differences between his first two ships and their cultures could be equated only to the differences between the dark ages and the renaissance.

Next, he drew a tour of shore duty at the White Sands Missile Range (WSMR). This tour was a real eye-opener. At White Sands, he was introduced to missiles, CW or continuous-wave instead of pulse radars, solid-state electronics, telemetry, and digital computers. His innate curiosity led him to finagle an assignment working in the labs with the engineers from Johns Hopkins University. As a result, he was up to his neck in "high-tech" research and development for almost three years.

The tour at the missile range was followed by a lengthy stint in FT "B" school at Great Lakes. There, he received advanced technical training; in-depth mathematics, electronics, and all the latest developments in shipboard weapons systems. Fun stuff, all of it. For an almost-high-school-dropout from a small town in Iowa, it was heady stuff too.

From "B" school, he was transferred to Seattle to join the pre-commissioning crew for his current ship, the *USS Wylie*. In another month, he was heading for an even newer ship, a nuclear-powered frigate. He had no idea what he'd find there, but he was looking forward to it. He welcomed change.

During his thirteen years in the Navy, Nick had witnessed a lot of changes. One thing he observed was that the new technology being introduced in modern ships and weapon systems brought with it certain attendant benefits for the crew. The plotting room on the *Wylie*, where the gunnery system's fire control computer, radar console, and other pieces of equipment were housed, for example, was quite roomy and air-conditioned.

But he knew the plotting room wasn't air-conditioned solely or even primarily for the sake of the crew. The primary purpose of the air-conditioning was to provide suitable operating conditions for the fire control computer, the electro-mechanical analog device that controlled the aiming of the ship's five-inch gun mounts.

The computer in front of him was a Mark 47/Mod 6, made by the Ford Instrument Division of the Sperry-Rand Corporation. Ford Instrument was the same company that made the old Mark 1A computer he worked on on board his first ship.

Proud of his work and a stickler for accuracy, Nick got upset whenever he heard references to UNIVAC and ENIAC as "the first" computers. They might have been the first useful digital computers, but the first real computer was the old Mark 1A analog fire control computer. The Mark 1A's predecessor, also made by Ford Instrument, was the Mark 1 Rangekeeper. That was about all the Mark 1 did too – keep track of range or distance to the target.

The Mark 47, the latest in a long line of electro-mechanical analog fire control computers from Ford Instrument, was about 10 feet long, six feet high, and two feet deep. Five vertical covers, all of which were adorned with various knobs and dials, graced its front. Inside the covers were the mechanisms that solved the fire control problem.

The Mark 47 was bigger than the old Mark 1A and it was also better; much more "electro" than "mechanical." Gone were the cams, rack-and-pinion gears, and slide-bar resolvers that made the old Mark 1A such a mechanical marvel.

In place of all the old mechanical contrivances were electronic computing networks, servo amplifiers, and resolvers. About the only truly mechanical thing in the Mark 47 was the time line, the motor and gear trains that turned resolver rotors and potentiometer shafts, picking off AC voltage signals representing continuously changing angular, rectangular, and linear values.

The color of the glossy enamel paint encasing and baked on the computer covers was known as equipment gray, a color that would show up on personal computers some fifteen years later. The gloss was the result of hours of simonizing by the members of a crew who thought their workplace ought also to be a showplace.

Nick was flanked on his left by the computer operator, known within the plotting room as "the skinny Guinea." Frank Scaletta was from Providence, Rhode Island, an aggressive, scrappy young man of pure Italian extract.

Frank, like Nick, was a "lifer." He had recently reenlisted. Frank's rank was petty officer second class, paygrade E-5, two notches below Nick. And, like Nick, Frank was an FT. Except for the young sailor on loan from the deck force, so were the rest of the members of the crew in the plotting room – "the fire control gang" as it was referred to.

## ***The Computer is Down***

To Nick's right was a crew of two at the radar console: Jim Sterl and Bill Ferry. Jim, tall and lanky, was an electronics whiz, a Nebraska farm boy who would never go back to the farm. Bill, short and dark like Frank and Nick, was a member of that rarest of all species – a Californian.

Some of the crew suspected Bill of being gay. Nick had given the matter some thought and concluded that Bill was nothing more than a gentle soul caught up in a harsh world, too timid or too stubborn to play the *macho* game.

The job of the radar, for surface and air targets, is to track the present position of the target. Or, if a beacon was available, the radar could track it. But Nick had decided it was his call to request or not request a beacon and he was damned if he'd ask for another one. For the impending mission, then, Sterl and Ferry had little to do. They would be electronic spectators, glued to their "tubes" just as people back in the States were glued to theirs.

Farther to Nick's left, in the forward and inboard corner of the plotting room, sat the firing key operator. Perched atop the squat, domed stable element, a device that several years later could have served as the model for R2/D2 in the movie *Star Wars*, the firing key operator's job was to relay commands from Nick to the gun mounts. Otherwise, he simply waited for the command to fire. He was the triggerman.

The firing key operator, true to his job title, held in one hand a pistol-grip firing key; a huge brass gun butt, replete with trigger guard and trigger but, in place of a barrel, a heavy, black, rubber-encased cable ran to a junction box on the bulkhead. From there, other wires ran aft and forward, from junction box to junction box, until the electrical connections finally terminated in the breechblocks of the two gun mounts.

The stable element on which the firing key operator was perched contained a gyroscope spinning at some 30,000 rpm. This enabled it to maintain itself perfectly perpendicular to the earth's surface. Thus it performed its job which was to provide the electrical signals giving the computer the imaginary horizontal and vertical planes needed to solve the fire control problem.

Five men, all enlisted, all but one highly-trained technicians, and a plotting room full of sophisticated gunfire control equipment. Not one of them, except for Nick, older than twenty-four. Young technicians and even younger technology, woven together in a multi-million dollar weapons system, all its parts and all its people waiting to do their respective jobs.

Nick was especially proud of the fact that his ship was able to operate without a commissioned officer as plotting room officer. It had been that way when he was a first-class petty officer too. He knew his stuff. So did his crew. The gun fire control system, men and equipment, was a well-oiled machine. And they had been to "Nam" twice before, wreaking untold amounts of death and destruction on its inhabitants. They did their jobs well.

On this particular day, death took the form of an airborne spotter in a light plane, drawing lazy circles in the sky over an as yet unidentified target on the beach, some 10,000 yards away. Unbeknownst to the spotter, Nick was eavesdropping on the spotter's conversation with the *Wylie*.

Nick liked to know what was coming his way before it came at him through regular channels. He was a tolerant man but he did not like surprises. One day he cornered the chief radioman in the chief's mess and arranged to have the voice radio traffic piped into the plotting room.

Now, listening to the chatter back and forth between the gunnery liason officer (GLO) up in the combat information center (CIC) and the airborne spotter, Nick knew a firing run was on its way. He didn't know what it was; maybe a bridge, maybe a convoy, or maybe a newly-spotted ammo dump. Whatever it was, they would blow it up. That was their job.

Suddenly, the chatter stopped, replaced by the structured, formal language of standard commands. The spotter was setting up the mission. Nick waited until he heard the spotter give the GLO the target coordinates before bringing his crew to the ready.

When the coordinates came, a simple "Heads up," was all he said to his crew.

Minds focused ears on important sounds, tuning out background noise. Jim and Bill pulled the curtain closed around their console; darkness was better for their task. Nick and Frank stepped closer to the computer. Atop the stable element, the young seaman sat unmoving.

Then came an unexpected deviation from routine.

"Uh," said the GLO, "those coordinates you gave us show up on our chart as an orphanage."

"Yup. Mine too," replied the spotter.

"Uh, what do you have in mind?" queried the GLO.

"Well, intelligence says Charley is using that orphanage as an OP, so we're gonna throw a few rounds in there and see what we can flush out."

## The Computer is Down

Staring intently at the computer, Nick said to no one in particular, "That mother-fucker must think he's on a goddamned quail hunt!"

"Uh, what can you see?" asked the GLO.

"Nothing but a bunch of kids and what looks to be a few nuns . . . but you never can tell . . . they could be VC."

"Shit!" said Nick.

Frank turned to Nick saying, "Nick, you think they're really gonna shoot it?"

"Nah," replied Nick, "probably some mix-up somewhere along the line. They'll call it off before long."

Deep in his soul, or whatever was left of it, Nick was getting sick. He knew it wouldn't be called off. It would be entered in the ship's log as just another routine shore bombardment mission.

Nick wished he hadn't badgered the chief radioman into piping the radio traffic into the plotting room. He wished he was back in California. He wished the goddamned spotter would crash and burn. He wished he was somewhere else, anywhere else but where he was. Why the fuck did this problem have to fall into *his* lap?

Looking around the plotting room, he saw his crew watching him. Jim and Bill, peering out from behind the curtain, had been listening and they too knew the nature of the intended target.

Frank was watching Nick with a measured gaze, wondering and waiting to see how Nick would handle this one.

Over in the corner, the young seaman atop the stable element was clearly agitated, fidgeting with and staring fixedly at the firing key in his left hand. He had just realized what it was he was being paid to do.

The mission proceeded. The map coordinates announced by the spotter were converted by the radarmen in CIC to north-south, east-west distances from the ship and relayed to Nick in the plotting room via the ship's sound-powered telephone system. The coordinates were set, the computer's time line was started, the solution was checked and, at Nick's command, the guns trained out, matched up, and shifted to automatic.

After that, they waited.

The waiting ended sooner than Nick would have liked. Over the radio came the command from the spotter to fire: "One round, high-explosive, load and shoot."

Nick had been frantically pondering what he knew of American history, military justice, and the Nuremberg war crimes trials. He'd also been eyeing the little tape-recorder he hooked up earlier, wondering if the contents of the tape would constitute "admissible evidence" in his defense in a war crimes trial or perhaps in a court-martial for cowardice in the face of the enemy or some such charge.

Before the GLO could relay the spotter's command to fire, Nick depressed the button on the microphone of his sound-powered telephone headset and said, "GLO, gun plot, the computer just went down."

The young seaman atop the stable element slumped forward even more, relieved at last of the weight of his awful responsibility and looking for all the world like the American Indian on horseback in a painting called *End of The Trail*. The firing key slipped from fingers too weak or no longer willing to hold it and bounced quietly on the rubber matting covering the plotting room deck.

Glancing toward the boy, Nick could see tears streaming down his cheeks. Go ahead, sonny boy, cry your heart out, he thought. We all oughta be cryin'.

Nick couldn't cry. He hadn't cried since he was fourteen, when his junior high school principal had his mechanical drawing teacher beat him with a board until he couldn't walk. There were still times when Nick wished he was a rifleman and could get both those sons-a-bitches in his sights.

Jim pulled back the curtain surrounding the radar console and he and Bill squinted at Nick, rubbing their eyes, probably as much from disbelief as from the necessity to adjust to the light.

Jim was a very serious young man, not at all impressed by the macho bullshit that dominated the social interactions aboard ship. Jim's eyes locked with those of Nick, his gaze level and steady.

No rattled cage there, thought Nick, just a good mind and a cool head. Then it dawned on him that there was a new measure of respect in Jim's eyes. He would have savored that under other circumstances.

Bill grinned nervously and said, "Chief, can I get you a cup of coffee?" He too had just realized there was more to his chief than spit-shined shoes and stiffly-starched khakis.

"Yeah," growled Nick, "and lace it with arsenic will you? And while you're at it, go find me a sword somewhere to fall on."

Frank studied Nick for a moment, still trying to decide his stand in this little drama. Then, stand taken, he grinned and said, "Chief, you want I should pull the covers and start tryin' to figure out what's wrong with her?"

## *The Computer is Down*

"That's probably a good idea, Frank," Nick replied. He watched as Frank removed the covers from the computer, setting off on what both knew was a fruitless but not pointless exercise in troubleshooting the problem with the Mark 47 computer.

Several hours later, the mission was aborted. The spotter, by now low on gas and completely out of patience, headed for home. The people in the orphanage went about their business, unaware of their close brush with the explosive effects of a solution to the fire control problem.

\* \* \* \* \*

Later that night, Nick was summoned to the Captain's sea cabin.

"Chief," the Captain began, "there's some scuttlebutt going around the ship that the computer wasn't really down; that you only reported it as down."

That goddamned crybaby is gonna get me hung, thought Nick.

"Captain, I can't be held responsible for scuttlebutt. Frankly, I don't give a shit what's goin' around."

"What was wrong with the computer?"

"I don't know. Whatever it was went away before we could track it down. It was an intermittent casualty. We'll just have to wait and see if it comes back and try to track it down again. That's all we can do."

"Don't you find it strange that it wasn't repaired until after the spotter left?"

"Coincidence," replied Nick.

"What was wrong with the computer?" the Captain asked again.

"Captain, I already told you, we had an intermittent casualty and it disappeared before we could track it down."

"How do you know it was down?" asked the Captain.

"Captain, I'm the only man on board this ship qualified to say if that beast is up or down. If I say it was down, it was down, and I say it was down. End of story."

Aware that he was being grilled, Nick bristled.

"Are you sayin' I'm lying?"

"Not at all, chief, I'm just trying to make sure you can withstand a board of inquiry in case it comes to that."

"Captain, I've said what I have to say. If someone wants to convene a board of inquiry, that's their business, not mine."

"You know, chief, those kinds of decisions aren't yours to make," said the captain.

"I don't know what you're talking about, skipper."

"Aborting a mission."

Nick stiffened.

"Captain, the computer went down. It was an intermittent casualty. We couldn't find it before it went away. There isn't a technician in the fleet who hasn't had similar experiences. A board of inquiry would get absolutely nowhere. As for me making those kinds of decisions, I disagree with you. They're very much mine to make."

"Take it easy, Nick. I'm just trying to make sure you're protected."

The two men were silent for a long time, each wondering what the future held. Nick broke the silence.

"Will there be anything else, sir?"

"No," replied the captain. "That'll be all."

Turning to leave, Nick was stopped by the captain's voice, softer now.

"Chief?"

Turning back, Nick said, "Yes sir?"

"Thanks."

"For what, skipper?"

With that, Nick stepped through the door of the captain's sea cabin and made his way through the pilot house out onto the wing of the bridge and into the night air of the Gulf of Tonkin.

Moving aft from the wing of the bridge, he paused midway between the bridge and the flag bags on the signal bridge. Leaning on the rail, he lit up a cigarette and stood unmoving for a while, wondering what had happened to the America he once thought existed.

## ***The Computer is Down***

Slowly, painfully, it dawned on him that maybe the America he once thought existed had existed only in his mind. Maybe it was nothing more than a fabrication, something he had made up based on what he'd been told in school, what he'd read in books, and what he'd seen in movies. And maybe, just maybe, it had all been planted there. Maybe the myth of America was just that, a myth. Worse; maybe it was a big lie.

Worst of all, maybe he wasn't doing such a good job of dealing with reality; maybe, like his mother had done, he was spending too much time in a goddamn fantasy world.

Shrugging off his thoughts, unwilling or unable to pursue them any further, he straightened up, flipped his cigarette into a tracer-like arc and watched it disappear into the water, its dying hiss muffled by the louder hiss of the ship's hull slicing through the water. Turning to leave the bridge, he had at least reached one conclusion: never again would he simply obey orders.

As he moved past the signalmen on his way down from the bridge, one of them overheard Nick mutter his final judgment of the day's work: "Fuck 'em. Fuck the whole goddamned bunch of 'em."