

"Thirty minutes and counting," the loudspeaker blared. Jake Grafton held his hat on his head against the breeze as he tilted his head to look up at the massive three-stage rocket towering into the blue sky. He squinted against the glare of the sunlight reflecting off the frost that covered the rocket's white skin. The cold fuel had lowered the skin temperature, causing moisture from the warm sea air to condense, then freeze.

"It's three hundred fifty-two feet, three and a half inches tall," Commander Toad Tarkington said expansively. He was full of facts and figures, enormous, meaningless numbers that managed to convey only the impression of stupendous size.

"You're sure of that?"

"Give or take a half inch. Shooting that thing is going to be a hell of a way to celebrate the Fourth of July."

"It is the holy Fourth, isn't it?"

Tarkington had spent the last month aboard the Goddard launch platform, a converted deep-sea drilling platform, and liked to play tour guide whenever his boss, Rear Admiral Jake Grafton, showed up with the international entourage in tow. Jake had been visiting the platform, which was sitting on the edge of the continental shelf fifty miles east of Cape Canaveral, for a couple of days every two weeks or so. This had been going on for months while the rocket was being assembled and tested.

Now it was ready. So the experts said, and there were a great many of them, from NASA, the air force, Europe, and Russia. Atop the third stage was the first of the Super Aegis space-based antiballistic-missile defense system satellites. The satellite contained a nuclear reactor and a laser, which would be used to shoot down ICBMs as they rose from the atmosphere. When fully operational the system would consist of eight killer satellites in mid-earth orbit. It would take another three years to get the other seven launched. Assuming the first one successfully passed its operational tests. But that was for other days in the hazy future.

Super Aegis was being launched from here as a sop to the Florida politicians, who were worried about contaminating Cape

Canaveral and the Florida east coast if the rocket blew up on launch. The sea launch also ruled out use of the space shuttle as a launch vehicle.

Today the assembly crane had been moved back and only the gantry carrying the electrical umbilical cords stood next to the rocket.

"I confess I never thought we'd get this far," Toad murmured.

The other tourists were crowding onto the small work area below the rocket, so Jake and Toad moved to the very edge of the platform, against the safety rail. The sea was a hundred feet below. Dark blue water, a few whitecaps, Jake took a deep breath, reveling in the smell of the salty sea air.

"Smells good," Toad said, reading his mood.

Three helicopters were orbiting the platform. Two of them were military birds, and the third belonged to a television pool, which was sharing the video feed. The buzzing of their engines came and went, depending on whether they were upwind or downwind.

A mile from the platform lay the aircraft carrier USS United States, barely making steerageway. Even from this distance Jake could see the hundreds of people lining the deck. By launch time most of the carrier's crew and the thousand or so members of the press and dignitaries who couldn't be accommodated on the launch platform would be standing on the four-acre flight deck. Several destroyers were also visible, though farther away, steaming back and forth between the launch platform and several dozen civilian boats--yachts--crammed to the gunwales with protesters.

The antinuclear, peace, and environmental activists were out in full force, having a wonderful holiday and making as much of a nuisance of themselves as possible.

With their onboard nuclear reactors, the Super Aegis killer satellites certainly had something for everyone to worry about. The threat of nuclear contamination if a rocket failed to reach

orbit had been minimized but could not be eliminated. Then there were those who felt that an effective ICBM shield made nuclear war more likely, not less so. Finally there were those who felt that it was obscene to spend so much money on a system that would in all likelihood never be used. All these cares and concerns had worked their way through the political process...and here sat the first component of the Super Aegis system, ready to launch.

One of the civilians standing nearby surrounded by aides and colleagues was the secretary of state, whose idea it had been to include Europe and Russia under the Super Aegis missile shield. That master stroke had cleared the way politically. The rockets lifting the satellites were made in Russia and the launch was funded by the Europeans.

The antiballistic-missile defense system itself, the Super Aegis satellites, were purely American. The general details of how the system worked were of course common knowledge, had been publicized around the globe and argued at great length in legislative halls from Washington to Moscow, but the technology at the heart of the system was highly classified. It would have to remain that way to ensure it could not be defeated by rogue, pirate, or outlaw states that might in the future get an itch to launch a ballistic missile at the Western allies.

The secretary of state had plenty of company today. With him were the secretary of defense and the national security adviser. No doubt the president and the rest of the cabinet would also have been here if one of the protesters had not pointed out that if the rocket exploded on the platform--an unlikely event--conceivably the entire government delegation might be immolated. This, the protester said wryly, would not be a complete disaster. So the president stayed home.

One of the civilians, in a tailored gray suit standing at the secretary's elbow, was General Eric "Fireball" Williams, the former chairman of the Joint Chiefs. These days he was the president of Consolidated Aerospace, the prime contractor for Super Aegis. After the protester's immolation crack Williams had publicly announced that he was going to be in the control room during the launch.

Super Aegis had saved Consolidated, according to the press. Fifty billion dollars spent so far, with more to come.

Most of the other big-ticket American weapons procurement programs had been canceled to fund the ICBM shield. Many people in and out of uniform had argued bitterly about the wisdom of that, but the public wanted protection, and a hundred billion dollars was a lot of gravy to be spread far and wide, so Congress had gone along. After all, the argument went, America was the only superpower, with planes, ships, and tanks enough to defeat anyone on earth, so the real threat was from third world regimes developing weapons of mass destruction. Super Aegis, the argument went, would be a big first step in protecting Western civilization. And with a hundred billion to spread around, there was something for everybody, as one commentator pointed out. What's not to like?

"If it works," Jake Grafton muttered.

"Oh ye of little faith, it will work, Admiral!" said the man beside him after glancing at his uniform and name tag. His name was Peter Kerr, and he was the engineer in charge of Super Aegis. Jake recognized him from several meetings that he had attended chaired by Kerr. To the best of Jake's recollection, Kerr had never spoken to him before. In fact, he would have been amazed if the man even remembered him.

"In fact, Super Aegis is the only antimissile defense system that would work," Kerr said as he looked at the dignitaries peering into the rocket's first-stage exhaust nozzles and gazing up, up, up. "All the academics said it couldn't be done, but there it is. The sensors in the satellite detect the exhaust of an ICBM booster lifting out of the atmosphere, the reactor powers up, generating the energy to track the warhead with radar and destroy it with a pulse of laser. Solves the detection and interception problems neatly, cheaply, and automatically."

"A better mousetrap," Jake agreed. Peter Kerr looked at him sharply, glanced again at his name tag, then turned away.

"There went your naval career," said a cheerful British voice at Jake's elbow. The owner, Wing Commander Alfred Barrington-

Lee, was the British military liaison officer to the Super Aegis team. Toad Tarkington liked to refer to him as "Hyphen," although Toad called him "sir" to his face. He was in his late forties and sported a nice potbelly that appeared larger than it really was due to his stooped, narrow shoulders and nonexistent hips. Jake hadn't managed to spend much time these last few months with Barrington-Lee. Toad had, and respected him, which was a positive recommendation.

Beside the RAF officer was Maurice Jadot, the French civilian on the liaison staff. He was a medium-sized, nondescript man who smoked Gauloises cigarettes--outside of course--and often loitered, flirting outrageously, around the female secretaries' desks. This open sexual tension in the workplace awed the Americans, who had been so browbeaten by the sexual Gestapo that they hadn't seen it done at the office in decades. Jadot spoke English with a pleasant accent. According to Tarkington, who was a connoisseur in these matters, the accent added to his sex appeal.

The German was Helmut Mayer. An urbane, witty, intelligent man of the world, Mayer was the most extroverted of the four, the one most often at the center of conversation. Just now he was shaking hands and muttering pleasantries to the dignitaries, many of whom he apparently knew well enough to greet by name. The women in the office found him fascinating. Unlike Jadot, Mayer treated all the women the same, friendly on a social, not sexual, level.

The fourth member of the team, who was looking around at the lively crowd as if he were attending his first hockey game, was Sergi Kuznetsov, the Russian. He was the only one of the four who was an acknowledged intelligence professional, yet he probably knew as much about ICBMs and the problems involved with shooting them down as any of the others. He was taciturn to a fault, spoke only when spoken to, and never made small talk. Tarkington referred to him as a stranger in a strange land, which Jake thought an apt description. Apparently America had overwhelmed him. When asked, he once admitted that this was his first foreign assignment.

Jake was the deputy to the team leader, Air Force Lieutenant General Art Blevins, who was somewhere below with the launch team. Tarkington filled an administrative assistant's billet, although in addition to his admin duties he functioned as Jake's assistant. He and the admiral had been together on various assignments for years.

Looking around, Jake decided he was probably the junior flag officer on the platform today. A good many three- and four-star officers were on the flight deck of the USS United States or one of her escorts. And truth be told, from that vantage point they would have a better view than the bunch on the Goddard platform, who were going to watch the launch on the control room monitors.

More people were filing up onto the tiny platform under the rocket, so Jake eased his way down the steps to the catwalk. From here he could see the giant flame deflectors that would vent the rocket's exhaust away from the platform's massive legs. He took a last look at the carrier, destroyers, frigates, and protesters' yachts as he made his way along the catwalk. He entered the personnel module and began climbing the ladders, working his way up six stories while uniformed NASA launch personnel filed down to make their final checks. The ladder ways reminded Grafton of those in aircraft carriers.

The control/launch module was designed to contain everyone on the Goddard platform during the launch. The module was a bombproof, fireproof vault with small, three-inch-thick windows that looked as if they could withstand anything up to a nuclear blast. Huge monitors were spotted strategically throughout the room and it was at these that the spectators looked. Cameras all over the platform were focused on the rocket, which gleamed on the monitors like..."the administration's phallic symbol."

Congresswoman Samantha Strader made this observation in a clear voice. She had the ability, honed through the years, to make herself heard in crowds. The babble died abruptly. A few people tittered nervously.

Strader had buttonholed the secretary of state, who had reached the command module just moments before Jake arrived. He was huddled with the secretary of defense and the chairman of

the Joint Chiefs. Strader was the senior minority member of the House Super Aegis subcommittee, which was why she was here. She was the administration's most vociferous critic of Super Aegis and had used that issue to catapult herself to national prominence. In fact, in some quarters she was seen as presidential timber. If she made a splash in the primaries, she certainly had a shot at the vice-presidential nomination.

"Man, she ought to love Super Aegis," Tarkington whispered. He had followed Jake up the ladder with the international liaison team in tow. "Got her on the cover of Time magazine last week."

Jake didn't hear the secretary's retort, but he heard Strader's riposte. "...should be issuing hara-kiri knives to you gentlemen, in the event this bottle rocket goes in the water. After squandering fifty billion on it, hara-kiri is the least you could do for your country."

The secretary had had enough of Sam Strader. "I'd be delighted to do the dirty deed on those terms, Ms. Strader," he said loudly, "if you'll promise to use the knife if Super Aegis works as advertised."

The public address system buzzed to life, ending the bantering with an order for all personnel on the Goddard platform to enter the command module. "Ten minutes and counting," the announcement ended.

The launch technicians sat at computer consoles butted against each other, all in a row, against the forward bulkhead. A second row of consoles sat behind the first, also oriented toward the windows. This arrangement allowed the controllers to peek through the bombproof portholes at the waiting rocket if they could somehow tear their eyes from their computer screens. Few, if any, did. The technicians wore headsets and concentrated fiercely on the screens before them.

Walking behind the technicians and looking over their shoulders were the scientists and engineers who designed and supervised the construction of Super Aegis. This launch was the culmination of years of effort, a lifetime of study and theorizing for most of these men and women.

They reminded Jake Grafton of expectant parents, chewing fingernails, strolling aimlessly, lost in their own thoughts. Here and there one of them would pause to study a computer monitor, then move on, apparently reassured.

At five minutes to go, all conversation behind the consoles stopped. The audience stood silently, watching.

Jake glanced at Strader, who was watching the proceedings with rapt attention.

The launch director's name was Stephen Gattsuo. He reminded Jake of an orchestra conductor, and in many ways he was. Grafton and the liaison team had attended many practice countdowns, so many that the admiral felt he could have written the launch order and got it pretty close. If anything, the real countdown was going much smoother than the practice sessions, which were full of emergencies and every malfunction the fertile brains of the engineers could conjure up.

A minor electrical problem delayed the countdown for several seconds, perhaps twenty, but the technicians rerouted data around the malfunctioning distribution bus so smoothly most of the observers didn't know there had been a problem.

Tick by tick, the clock worked down. All conversation ceased among the spectators.

Ignition!

With a roar that was awe-inspiring, the first-stage rocket engines ignited. For only a moment was the beast still chained, then it began to rise. Through the bombproof windows only white-hot fire could be seen, so everyone not staring at a computer screen looked at a monitor.

Slowly, majestically, the rocket rose on a pillar of fire, perceptibly accelerating.

As the intensity of the noise began to diminish, the view on the monitors became an upward look at the dazzling exhaust plume of the rising rocket.

Jake Grafton realized he had been holding his breath. His skin tingled. He exhaled, then forced himself to breathe regularly as the rocket slowly shrank to a dot of brilliant flame on the monitors.

Now he was aware of the controllers' voices, talking to chase pilots, talking to each other, talking to tracking stations downrange. He clearly heard the first hint of trouble. "Bahamas tracking has gone off the air, apparently power failure." He was watching the monitor when he saw the flash that meant the first stage had expended its fuel and dropped away as the second stage ignited.

The exhaust was a white-hot star in the monitors, low on the horizon, high in the atmosphere, accelerating...

"Azores tracking is down. We are the only station with contact, and we're going to lose it in twenty-five seconds."

"Missile is changing course! Two, three, four degrees left...six, eight..."

Jake glanced at Gattsuo, the launch director, who stood like a statue staring at the monitor, listening to the reports. The missile should not be changing course. With a nuclear reactor aboard the satellite, the United States could not afford, ethically or politically, for the missile to wander off course and crash wherever, contaminating the crash site for thousands of years. On the other hand, if the missile managed to place the Super Aegis satellite in orbit, perhaps the orbit could be successfully altered later, saving the mission and the billions of dollars involved. Gattsuo was the man on the spot; the decision to destroy the missile was his to make.

"Second stage burnout in five seconds...four...three...two..."

The star in the center of the monitors that was the second-stage exhaust winked out. Leaving...nothing!

"Third stage has failed to ignite," the male voice on the PA system intoned flatly. "Missile seventeen degrees off course. We'll lose contact in nine seconds...eight..."

As the seconds passed, Gattsuo's face reflected his agony.

"Self destruct," he ordered. "Destroy it."

Nothing on the monitor. No flash, nothing.

"Three..two...one..radar contact lost!"

In the crowded launch module dead silence reigned. It was broken finally when Stephen Gattsuo said disgustedly, "Shit!"

In the seconds that followed that comment, Jake Grafton distinctly heard a strident feminine voice ask, "Where's the knife?"

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In the hours that followed, a parade of helicopters ferried the VIPs off the Goddard platform. They were a subdued lot, even Congresswoman Sam Strader, who knew better than to gloat. As they filed up onto the helo platform and stared at the empty place where the rocket had been, they even ignored each other. It was as if they had witnessed something obscene and were ashamed they had been there.

Jake Grafton and the liaison team remained behind. As the hours passed, the tracking stations came back on the air one by one, but no one could explain why the stations had all experienced power failures at the most inopportune time. "The odds are a billion to one that all the stations would lose power at the same time, and by God it happened!" exclaimed Gattsuo and smashed the flat of his hand against a bulkhead.

"Or someone made it happen," Toad Tarkington muttered.

"Why did the rocket go off course?" Jake Grafton asked the launch director.

"We don't know that it did."

"It sounded to me like it was wandering around."

Gattsuo had other things on his mind. "Maybe it drifted a little off course," he said distractedly. "We'll study the data."

"Why didn't the third-stage engines ignite?"

"We don't know."

"Did it self-destruct or didn't it?"

"We don't know."

"If it didn't self-destruct, where did the third stage--and the satellite--come down?"

"Goddamn it, Admiral, we don't know!"

Three days later when Jake and the liaison team finally went ashore, none of those questions had been answered. The SuperAegis killer satellite was lost.

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