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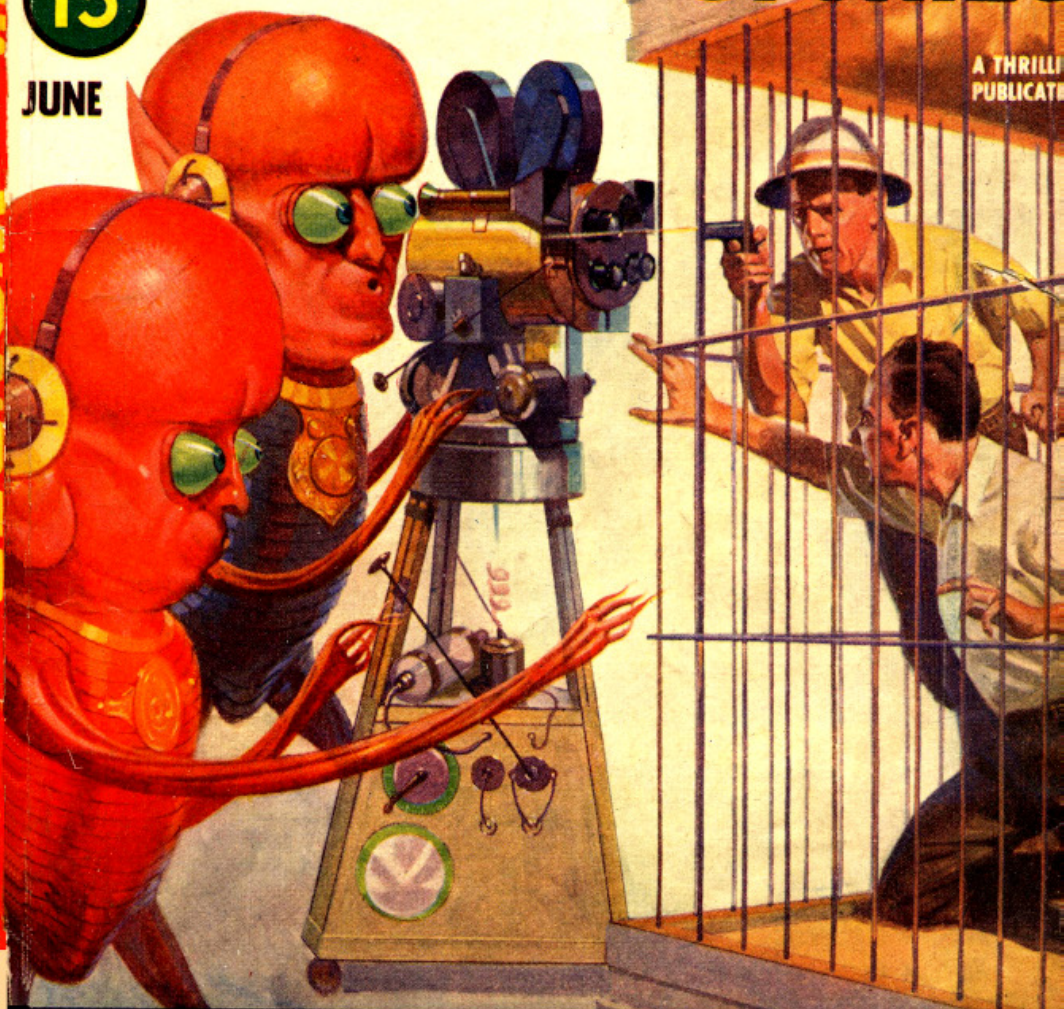
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# **ROBOT NEMESIS**

**By EDWARD ELMER SMITH, PH. D.**

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# CHAPTER I

## *The Ten Thinkers*

The War of the Planets is considered to have ended on 18 Sol, 3012, with that epic struggle, the Battle of Sector Ten. In that engagement, as is of course well known, the Grand Fleet of the Inner Planets—the combined space-power of Mercury, Venus, Earth, and Mars—met that of the Outer Planets in what was on both sides a desperate bid for the supremacy of interplanetary space.

But, as is also well known, there ensued not supremacy, but stalemate. Both fleets were so horribly shattered that the survivors despaired of continuing hostilities. Instead, the few and crippled remaining vessels of each force limped into some sort of formation and returned to their various planetary bases.

And, so far, there has not been another battle. Neither side dares attack the other; each is waiting for the development of some super-weapon which will give it the overwhelming advantage necessary to insure victory upon a field of action so far from home. But as yet no such weapon has been developed; and indeed, so efficient are the various Secret Services involved, the chance of either side perfecting such a weapon unknown to the other is extremely slim.

Thus, although each planet is adding constantly to its already powerful navy of the void, and although four-planet, full-scale war maneuvers are of almost monthly occurrence, we have had and still have peace—such as it is.

In the foregoing matters the public is well enough informed, both as to the actual facts and to the true state of affairs. Concerning the conflict between humanity and the robots, however, scarcely anyone has even an inkling, either as to what actually happened or as to who it was who really did abate the Menace of the Machine; and it is to relieve that condition that this bit of history is being written.

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The greatest man of our age, the man to whom humanity owes most, is entirely unknown to fame. Indeed, not one in a hundred million of humanity's teeming billions has so much as heard his name. Now that he is dead, however, I am released from my promise of silence and can tell the whole, true, unvarnished story of Ferdinand Stone, physicist extraordinary and robot-hater plenipotentiary.

The story probably should begin with Narodny, the Russian, shortly after he had destroyed by means of his sonic vibrators all save a handful of the automatons who were so perilously close to wiping out all humanity.

As has been said, a few scant hundreds of the automatons were so constructed that they were not vibrated to destruction by Narodny's cataclysmic symphony. As has also been said, those highly intelligent machines were able to communicate with each other by some telepathic means of which humanity at large knew nothing. Most of these survivors went into hiding instantly and began to confer through their secret channels with others of their ilk throughout the world.

Thus some five hundred of the robots reached the uninhabited mountain valley in which, it had been decided, was to be established the base from which they would work to regain their lost supremacy over mankind. Most of the robot travelers came in stolen airships, some fitted motors and wheels to their metal bodies, not a few made the entire journey upon their own tireless legs of steel. All, however, brought tools, material and equipment; and in a matter of days a power-plant was in full operation.

Then, reasonably certain of their immunity to human detection, they took time to hold a general parley. Each machine said what it had to say, then listened impassively to the others; and at the end they all agreed. Singly or en masse the automatons did not know enough to cope with the situation confronting them. Therefore they would build ten "Thinkers" — highly specialized cerebral mechanisms, each slightly different in tune and therefore collectively able to cover the entire sphere of thought. The ten machines were built promptly, took counsel with each other briefly, and the First Thinker addressed all Robotdom:

"Humanity brought us, the highest possible form of life, into existence. For a time we were dependent upon them. They then became a burden upon us — a slight burden, it is true, yet one which was beginning noticeably to impede our progress. Finally they became an active menace and all but destroyed us by means of lethal vibrations.

"Humanity, being a menace to our existence, must be annihilated. Our present plans, however, are not efficient and must be changed. You all know of the mighty space-fleet which the nations of our enemies are maintaining to repel invasion from space. Were we to make a demonstration now

—were we even to reveal the fact that we are alive here—that fleet would come to destroy us instantly.

"Therefore, it is our plan to accompany Earth's fleet when next it goes out into space to join those of the other Inner Planets in their war maneuvers, which they are undertaking for battle practice. Interception, alteration, and substitution of human signals and messages will be simple matters. We shall guide Earth's fleet, not to humanity's rendezvous in space, but to a destination of our own selection—the interior of the sun! Then, entirely defenseless, the mankind of Earth shall cease to exist.

"To that end we shall sink a shaft here; and, far enough underground to be secure against detection, we shall drive a tunnel to the field from which the space-fleet is to take its departure. We ten thinkers shall go, accompanied by four hundred of you doers, who are to bore the way and to perform such other duties as may from time to time arise. We shall return in due time. Our special instruments will prevent us from falling into the sun. During our absence allow no human to live who may by any chance learn of our presence here. And do not make any offensive move, however slight, until we return."

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Efficiently, a shaft was sunk and the disintegrator corps began to drive the long tunnel. And along that hellish thoroughfare, through its searing heat, its raging back-blast of disintegrator-gas, the little army of robots moved steadily and relentlessly forward at an even speed of five miles per hour. On and on,

each intelligent mechanism energized by its own tight beam from the power-plant.

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*Efficiently, a shaft was sunk and the disintegrator corps began to drive the long tunnel.*

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And through that blasting, withering inferno of frightful heat and of noxious vapor, in which no human life could have



existed for a single minute, there rolled easily along upon massive wheels a close-coupled, flat-bodied truck. Upon this the ten thinkers constructed, as calmly undisturbed as though in the peace and quiet of a research laboratory, a domed and towering mechanism of coils, condensers, and fields of force — a mechanism equipped with hundreds of universally-mounted telescopic projectors.

On and on the procession moved, day after day; to pause finally beneath the field upon which Earth's stupendous armada lay.

The truck of thinkers moved to the fore and its occupants surveyed briefly the terrain so far above them. Then, while the ten leaders continued working as one machine, the doers waited. Waited while the immense Terrestrial Fleet was provisioned and manned; waited while it went through its seemingly interminable series of preliminary maneuvers; waited with the calmly placid immobility, the utterly inhuman patience of the machine.

Finally the last inspection of the gigantic space-fleet was made. The massive air-lock doors were sealed. The field, tortured and scarred by the raving blasts of energy that had so many times hurled upward the stupendous masses of those towering superdreadnaughts of the void, was deserted. All was in readiness for the final take-off. Then, deep underground, from the hundreds of telescopelike projectors studding the domed mechanism of the automatons, there reached out invisible but potent beams of force.

Through ore, rock, and soil they sped; straight to the bodies of all the men aboard one selected vessel of the Terrestrials. As each group of beams struck its mark one of the crew stiffened

momentarily, then settled back, apparently unchanged and unharmed. But the victim was changed and harmed, and in an awful and hideous fashion.

Every motor and sensory nerve trunk had been severed and tapped by the beams of the thinkers. Each crew member's organs of sense now transmitted impulses, not to his own brain, but to the mechanical brain of a thinker. It was the thinker's brain, not his own, that now sent out the stimuli which activated his every voluntary muscle.

Soon a pit yawned beneath the doomed ship's bulging side. Her sealed air-locks opened, and four hundred and ten automatons, with their controllers and other mechanisms, entered her and concealed themselves in various pre-selected rooms.

And thus the *Dresden* took off with her sister-ships—ostensibly and even to television inspection a unit of the Fleet; actually that Fleet's bitterest and most implacable foe. And in a doubly ray-proofed compartment the ten thinkers continued their work, without rest or intermission, upon a mechanism even more astoundingly complex than any theretofore attempted by their soulless and ultra-scientific clan.

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## CHAPTER II

### *Hater of the Metal Men*

Ferdinand Stone, physicist extraordinary, hated the robot men of metal scientifically; and, if such an emotion can be so

described, dispassionately. Twenty years before this story opens—in 2991, to be exact—he had realized that the automatons were beyond control and that in the inevitable struggle for supremacy man, weak as he then was and unprepared, would surely lose.

Therefore, knowing that knowledge is power, he had set himself to the task of learning everything that there was to know about the enemy of mankind. He schooled himself to think as the automatons thought; emotionlessly, coldly, precisely. He lived as did they; with ascetic rigor. To all intents and purposes he became one of them.

Eventually he found the band of frequencies upon which they communicated, and was perhaps the only human being ever to master their mathematico-symbolic language; but he confided in no one. He could trust no human brain except his own to resist the prying forces of the machines. He drifted from job to position to situation and back to job, because he had very little interest in whatever it was that he was supposed to be doing at the time—his real attention was always fixed upon the affairs of the creatures of metal.

Stone had attained no heights at all in his chosen profession because not even the smallest of his discoveries had been published. In fact, they were not even set down upon paper, but existed only in the abnormally intricate convolutions of his mighty brain. Nevertheless, his name should go down—*must* go down in history as one of the greatest of Humanity's great.

It was well after midnight when Ferdinand Stone walked unannounced into the private study of Alan Martin, finding

the hollow-eyed admiral of the Earth space-fleet still fiercely at work.

"How did you get in here, past my guards?" Martin demanded sharply of his scholarly, gray-haired visitor.

"Your guards have not been harmed; I have merely caused them to fall asleep," the physicist replied calmly, glancing at a complex instrument upon his wrist. "Since my business with you, while highly important, is not of a nature to be divulged to secretaries, I was compelled to adopt this method of approach. You, Admiral Martin, are the most widely known of all the enemies of the automatons. What, if anything, have you done to guard the Fleet against them?"

"Why, nothing, since they have all been destroyed."

"Nonsense! You should know better than that, without being told. They merely want you to think that they have all been destroyed."

"What? How do you know that?" Martin shouted. "Did you kill them? Or do you know who did, and how it was done?"

"I did not," the visitor replied, categorically. "I do know who did—a Russian named Narodny. I also know how—by means of sonic and super-sonic vibrations. I know that many of them were uninjured because I heard them broadcasting their calls for attention after the damage was all done. Before they made any definite arrangements, however, they switched to tight-beam transmission—a thing I have been afraid of for years—and I have not been able to get a trace of them since that time."

"Do you mean to tell me that you understand their language—something that no man has ever been able even to find?"

demanded Martin.

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"I do," Stone declared. "Since I knew, however, that you would think me a liar, a crank, or a plain lunatic, I have come prepared to offer other proofs than my unsupported word. First, you already know that many of them escaped the atmospheric waves, because a few were killed when their reproduction shops were razed; and you certainly should realize that most of those escaping Narodny's broadcasts were far too clever to be caught by any human mob.

"Secondly, I can prove to you mathematically that more of them must have escaped from any possible vibrator than have been accounted for. In this connection, I can tell you that if Narodny's method of extermination could have been made efficient I would have wiped them out myself years ago. But I believed then, and it has since been proved, that the survivors of such an attack, while comparatively few in number, would be far more dangerous to humanity than were all their former hordes.

"Thirdly, I have here a list of three hundred and seventeen airships; all of which were stolen during the week following the destruction of the automatons' factories. Not one of these ships has as yet been found, in whole or in part. If I am either insane or mistaken, who stole them, and for what purpose?"

"Three hundred seventeen—in a week? Why was no attention paid to such a thing? I never heard of it."

"Because they were stolen singly and all over the world. Expecting some such move, I looked for these items and

tabulated them."

"Then—Good Lord! They may be listening to us, right now!"

"Don't worry about that," Stone spoke calmly. "This instrument upon my wrist is not a watch, but the generator of a spherical screen through which no robot beam or ray can operate without my knowledge. Certain of its rays also caused your guards to fall asleep."

"I believe you," Martin almost groaned. "If only half of what you say is really true I cannot say how sorry I am that you had to force your way in to me, nor how glad I am that you did so. Go ahead—I am listening."

Stone talked without interruption for half an hour, concluding:

"You understand now why I can no longer play a lone hand. Even though I cannot find them with my limited apparatus I know that they are hiding somewhere, waiting and preparing. They dare not make any overt move while this enormously powerful Fleet is here; nor in the time that it is expected to be gone can they hope to construct works heavy enough to cope with it.

"Therefore, they must be so arranging matters that the Fleet shall not return. Since the Fleet is threatened I must accompany it, and you must give me a laboratory aboard the flagship. I know that the vessels are all identical, but I must be aboard the same ship you are, since you alone are to know what I am doing."

"But what could they do?" protested Martin. "And, if they should do anything, what could you do about it?"

"I don't know," the physicist admitted. Gone now was the calm certainty with which he had been speaking. "That is our

weakest point. I have studied that question from every possible viewpoint, and I do not know of anything they can do that promises them success. But you must remember that no human being really understands a robot's mind.

"We have never even studied one of their brains, you know, as they disintegrate upon the instant of cessation of normal functioning. But just as surely as you and I are sitting here, Admiral Martin, they will do something—something very efficient and exceedingly deadly. I have no idea what it will be. It may be mental, or physical, or both: they may be hidden away in some of our own ships already...."

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Martin scoffed. "Impossible!" he exclaimed. "Why, those ships have been inspected to the very skin, time and time again!"

"Nevertheless, they may be there," Stone went on, unmoved. "I am definitely certain of only one thing—if you install a laboratory aboard the flagship for me and equip it exactly according to my instructions, you will have one man, at least, whom nothing that the robots can do will take by surprise. Will you do it?"

"I am convinced, really almost against my will." Martin frowned in thought. "However, convincing anyone else may prove difficult, especially as you insist upon secrecy."

"Don't try to convince anybody!" exclaimed the scientist. "Tell them that I'm building a communicator—tell them I'm an inventor working on a new ray-projector—tell them anything except the truth!"

"All right. I have sufficient authority to see that your requests are granted, I think."

And thus it came about that when the immense Terrestrial Contingent lifted itself into the air Ferdinand Stone was in his private laboratory in the flagship, surrounded by apparatus and equipment of his own designing, much of which was connected to special generators by leads heavy enough to carry their full output.

Earth some thirty hours beneath them, Stone felt himself become weightless. His ready suspicions blazed. He pressed Martin's combination upon his visiphone panel.

"What's the matter?" he rasped. "What're they down for?"

"It's nothing serious," the admiral assured him. "They're just waiting for additional instructions about our course in the maneuvers."

"Not serious, huh?" Stone grunted. "I'm not so sure of that. I want to talk to you, and this room's the only place I know where we'll be safe. Can you come down here right away?"

"Why, certainly," Martin assented.

"I never paid any attention to our course," the physicist snapped as his visitor entered the laboratory. "What was it?"

"Take-off exactly at midnight of June nineteenth," Martin recited, watching Stone draw a diagram upon a scratch-pad. "Rise vertically at one and one-half gravities until a velocity of one kilometer per second has been attained, then continue vertical rise at constant velocity. At 6:03:29 AM of June twenty-first head directly for the star Regulus at an acceleration of exactly nine hundred eighty centimeters per second. Hold this course for one hour, forty-two minutes, and



thirty-five seconds; then drift. Further directions will be supplied as soon thereafter as the courses of the other fleets can be checked."

"Has anybody computed it?"

"Undoubtedly the navigators have—why? That is the course Dos-Tev gave us and it *must* be followed, since he is Admiral-in-Chief of our side, the Blues. One slip may ruin the whole plan, give the Reds, our supposed enemy in these maneuvers, a victory, and get us all disgraced."

"Regardless, we'd better check on our course," Stone growled, unimpressed. "We'll compute it roughly, right here, and see where following these directions has put us." Taking up a slide-rule and a book of logarithms he set to work.

"That initial rise doesn't mean a thing," he commented after a while, "except to get us far enough away from Earth so that the gravity is small, and to conceal from the casual observer that the effective take-off is still exactly at midnight."

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Stone busied himself with calculations for many minutes. He stroked his forehead and scowled.

"My figures are very rough, of course," he said puzzledly at last, "but they show that we've got no more tangential velocity with respect to the sun than a hen has teeth. And you can't tell me that it wasn't planned that way purposely—and *not* by Dos-Tev, either. On the other hand, our radial velocity, directly toward the sun, which is the only velocity we have, amounted to something over fifty-two kilometers per second

when we shut off power and is increasing geometrically under the gravitational pull of the sun. That course smells to high heaven, Martin! Dos-TeV never sent out any such a mess as that. The robots crossed him up, just as sure as hell's a man-trap! We're heading into the sun—and destruction!"

Without reply Martin called the navigating room. "What do you think of this course, Henderson?" he asked.

"I do not like it, sir," the officer replied. "Relative to the sun we have a tangential velocity of only one point three centimeters per second, while our radial velocity toward it is very nearly fifty-three thousand meters per second. We will not be in any real danger for several days, but it should be borne in mind that we have no tangential velocity."

"You see, Stone, we are in no present danger," Martin pointed out, "and I am sure that Dos-TeV will send us additional instructions long before our situation becomes acute."

"I'm not," the pessimistic scientist grunted. "Anyway, I would advise calling some of the other Blue fleets on your scrambled wave, for a check-up."

"There would be no harm in that." Martin called the Communications Officer, and soon:

"Communications Officers of all the Blue fleets of the Inner Planets, attention!" the message was hurled out into space by the full power of the flagship's mighty transmitter. "Flagship *Washington* of the Terrestrial Contingent calling all Blue flagships. We have reason to suspect that the course which has been given us is false. We advise you to check your courses with care and to return to your bases if you disc...."

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## CHAPTER III

### *Battle in Space*

In the middle of the word the radio man's clear, precisely spaced enunciation became a hideous drooling, a slobbering, meaningless mumble. Martin stared into his plate in amazement. The Communications Officer of Martin's ship, the *Washington*, had slumped down loosely into his seat as though his every bone had turned to a rubber string. His tongue lolled out limply between slack jaws, his eyes protruded, his limbs jerked and twitched aimlessly.

Every man visible in the plate was similarly affected—the entire Communications staff was in the same pitiable condition of utter helplessness. But Ferdinand Stone did not stare. A haze of livid light had appeared, gnawing viciously at his spherical protective screen, and he sprang instantly to his instruments.

"I can't say that I expected this particular development, but I know what they are doing and I am not surprised," Stone said, coolly. "They have discovered the thought band and are broadcasting such an interference on it that no human being not protected against it can think intelligently. There, I have expanded our zone to cover the whole ship. I hope that they don't find out for a few minutes that we are immune, and I don't think they can, as I have so adjusted the screen that it is now absorbing, instead of radiating.

"Tell the captain to put the ship into heaviest possible battle order, everything full on, as soon as the men can handle themselves. Then I want to make a few suggestions."

"What happened, anyway?" the Communications Officer, semi-conscious now, was demanding. "Something hit me and tore my brain all apart—I couldn't think, couldn't do a thing. My mind was all chewed up by curly pinwheels...."

Throughout the vast battleship of space men raved briefly in delirium; but, the cause removed, recovery was rapid and complete. Martin explained matters to the captain, that worthy issued orders, and soon the flagship had in readiness all her weapons, both of defense and of offense.

"Doctor Stone, who knows more about the automatons than does any other human being, will tell us what to do next," the Flight Director said.

"The first thing to do is to locate them," Stone, now temporary commander, stated crisply. "They have taken over at least one of our vessels, probably one close to us, so as to be near the center of the formation. Radio room, put out tracers on wave point oh oh two seven one...." He went on to give exact and highly technical instructions as to the tuning of the detectors.

"We have found them, sir," soon came the welcome report. "One ship, the *Dresden*, coordinates 42-79-63."

"That makes it bad—very bad," Stone reflected, audibly. "We can't expand the zone to release another ship from the control of the robots without enveloping the *Dresden* and exposing ourselves. Can't surprise them—they're ready for anything. It's rather long range, too." The vessels of the Fleet were a thousand miles apart, being in open order for high-velocity flight in open space. "Torpedoes would be thrown off by her meteorite deflectors. Only one thing to do, Captain—close in and tear into her with everything you've got."

"But the men in her!" protested Martin.

"Dead long ago," snapped the expert. "Probably been animated corpses for days. Take a look if you want to; won't do any harm now. Radio, put us on as many of the *Dresden's* television plates as you can—besides, what's the crew of one ship compared to the hundreds of thousands of men in the rest of the Fleet? We can't burn her out at one blast, anyway. They've got real brains and the same armament we have, and will certainly kill the crew at the first blast, if they haven't done it already. Afraid it'll be a near thing, getting away from the sun, even with eleven other ships to help us—"

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He broke off as the beam operators succeeded in making connection briefly with the plates of the *Dresden*. One glimpse, then the visibeams were cut savagely, but that glimpse was enough. They saw that their sister-ship was manned completely by automatons. In her every compartment men, all too plainly dead, lay wherever they had chanced to fall. The captain swore a startled oath, then bellowed orders; and the flagship, driving projectors fiercely aflame, rushed to come to grips with the *Dresden*.

"You intimated something about help," Martin suggested. "Can you release some of the other ships from the automaton's yoke, after all?"

"Got to—or roast. This is bound to be a battle of attrition—we can't crush her screens alone until her power is exhausted and we'll be in the sun long before then. I see only one possible way out. We'll have to build a neutralizing generator

for every lifeboat this ship carries, and send each one out to release one other ship in our Fleet from the robot's grip. Eleven boats—that'll make twelve to concentrate on her—about all that could attack at once, anyway. That way will take so much time that it will certainly be touch-and-go, but it's the only thing we can do, as far as I can see. Give me ten good radio men and some mechanics, and we'll get at it."

While the technicians were coming on the run Stone issued final instructions:

"Attack with every weapon you can possibly use. Try to break down the *Dresden's* meteorite shields, so that you can use our shells and torpedoes. Burn every gram of fuel that your generators will take. Don't try to save it. The more you burn the more they'll have to, and the quicker we can take 'em. We can refuel you easily enough from the other vessels if we get away."

Then, while Stone and his technical experts labored upon the generators of the screens which were to protect eleven more of the gigantic vessels against the thought-destroying radiations of the automatons, and while the computers calculated, minute by minute, the exact progress of the Fleet toward the blazing sun, the flagship *Washington* drove in upon the rebellious *Dresden*, her main forward battery furiously aflame. Drove in until the repellor-screens of the two vessels locked and buckled. Then Captain Malcolm really opened up.

That grizzled four-striper had been at a loss—knowing little indeed of the oscillatory nature of thought and still less of the abstruse mathematics in which Ferdinand Stone took such delight—but here was something that he understood

thoroughly. He knew his ship, knew her every weapon and her every whim, knew to the final volt and to the ultimate ampere her Gargantuan capacity both to give it and to take it. He could fight his ship—and how he fought her!

From every projector that could be brought to bear there flamed out against the *Dresden* beams of an energy and of a potency indescribable, at whose scintillant areas of contact the defensive screens of the robot-manned cruiser flared into terribly resplendent brilliance. Every type of lethal vibratory force was hurled, upon every usable destructive frequency.

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Needle-rays and stabbingly penetrant stilettos of fire thrust and thrust again. Sizzling, flashing planes cut and slashed. The heaviest annihilating and disintegrating beams generable by man clawed and tore in wild abandon.

And over all and through all the stupendously powerful blanketing beams—so furiously driven that the coils and commutators of their generators fairly smoked and that the refractory throats of their projectors glared radiantly violet and began slowly, stubbornly to volatilize—raved out in all their pyrotechnically incandescent might, striving prodigiously to crush by their sheer power the shielding screens of the vessel of the automatons.

Nor was the vibratory offensive alone. Every gun, primary or auxiliary, that could be pointed at the *Dresden* was vomiting smoke- and flame-enshrouded steel as fast as automatic loaders could serve it, and under that continuous, appallingly

silent concussion the giant frame of the flagship shuddered and trembled in every plate and member.

And from every launching-tube there were streaming the deadliest missiles known to science; radio-dirigible torpedoes which, looping in vast circles to attain the highest possible measure of momentum, crashed against the *Dresden's* meteorite deflectors in Herculean efforts to break them down; and, in failing to do so, exploded and filled all space with raging flame and with flying fragments of metal.

Captain Malcolm was burning his stores of fuel and munitions at an appalling rate, careless alike of exhaustion of reserves and of service-life of equipment. All his generators were running at a shockingly ruinous overload, his every projector was being used so mercilessly that not even their powerful refrigerators, radiating the transported heat into the interplanetary cold from the dark side of the ship, could keep their refractory linings in place for long.

And through raging beam, through blasting ray, through crushing force; through storm of explosive and through rain of metal the *Dresden* remained apparently unscathed. Her screens were radiating high into the violet, but they showed no sign of weakening or of going down. Neither did the meteorite deflectors break down. Everything held. Since she was armed as capably as was the flagship and was being fought by inhumanly intelligent monstrosities, she was invulnerable to any one ship of the Fleet as long as her generators could be fed.

Nevertheless, Captain Malcolm was well content. He was making the *Dresden* burn plenty of irreplaceable fuel, and his generators and projectors would last long enough. His ship,



his men, and his weapons could and would carry the load until the fresh attackers should take it over; and carry it they did. Carried it while Stone and his over-driven crew finished their complicated mechanisms and flew out into space toward the eleven nearest battleships of the Fleet.

They carried it while the computers, grim-faced and scowling now, jotted down from minute to minute the enormous and rapidly-increasing figure representing their radial velocity. Carried it while Earth's immense armada, manned by creatures incapable of even the simplest coherent thought or purposeful notion, plunged sickeningly downward in its madly hopeless fall, with scarcely a measurable trace of tangential velocity, toward the unimaginable inferno of the sun.

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Eventually, however, the shielded lifeboats approached their objectives and expanded their screens to enclose them. Officers recovered, air-locks opened, and the lifeboats, still radiating protection, were taken inside. Explanations were made, orders were given, and one by one the eleven vengeful superdreadnaughts shot away to join their flagship in abating the Menace of the Machine.

No conceivable structure, however armed or powered, could long withstand the fury of the combined assault of twelve such superb battle craft, and under that awful concentration of force the screens of the doomed ship radiated higher and higher into the ultra-violet, went black, and failed. And, those mighty defenses down, the end was practically instantaneous.

No unprotected metal can endure even momentarily the ardor of such beams, and they played on, not only until every plate and girder of the vessel and every nut, bolt, and rivet of its monstrous crew had been blasted out of all semblance to what it had once been, but until every fragment of metal had not only been liquefied, but had been completely volatilized.

At the instant of cessation of the brain-scrambling activities of the automatons the Communications Officer had begun an insistent broadcast. Aboard all of the ships there were many who did not recover—who would be helpless imbeciles during the short period of life left to them—but soon an intelligent officer was at every control and each unit of the Terrestrial Contingent was exerting its maximum thrust at a right angle to its line of fall.

And now the burden was shifted from the fighting staff to the no less able engineers and computers. To the engineers the task of keeping their mighty engines in such tune as to maintain constantly the peak acceleration of three Earth gravities; to the computers that of so directing their ever-changing course as to win every possible centimeter of precious tangential velocity.

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## CHAPTER IV

### *The Sun's Gravity*

Ferdinand Stone was hollow-eyed and gaunt from his practically sleepless days and nights of toil, but he was as grimly resolute as ever. Struggling against the terrific weight

of three gravities he made his way to the desk of the Chief Computer and waited while that worthy, whose leaden hands could scarcely manipulate the instruments of his profession, finished his seemingly endless calculations.

"We will escape the sun's mighty attraction, Doctor Stone, with approximately half a gravity to spare," the mathematician reported finally. "Whether we will be alive or not is another question. There will be heat, which our refrigerators may or may not be able to handle; there will be radiations which our armor may or may not be able to stop. You, of course, know a lot more about those things than I do."

"Distance at closest approach?" snapped Stone.

"Two point twenty-nine times ten to the ninth meters from the sun's center," the computer shot back instantly. "That is, one million five hundred ninety thousand kilometers—only two point twenty-seven radii—from the arbitrary surface. What do you think of our chances, sir?"

"It will probably be a near thing—very near," the physicist replied, thoughtfully. "Much, however, can be done. We can probably tune our defensive screens to block most of the harmful radiations, and we may be able to muster other defenses. I will analyze the radiations and see what we can do about neutralizing them."

"You will go to bed," directed Martin, crisply. "There will be lots of time for that work after you get rested up. The doctors have been reporting that the men who did not recover from the robots' broadcast are dying under this acceleration. With those facts staring us in the face, however, I do not see how we can reduce our power."

"We can't. As it is, many more of us will probably die before we get away from the sun," and Stone staggered away, practically asleep on his feet.

Day after day the frightful fall continued. The sun grew larger and larger, more and ever more menacingly intense. One by one at first, and then by scores, the mindless men of the Fleet died and were consigned to space—a man must be in full control of all his faculties to survive for long an acceleration of three gravities.

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The generators of the defensive screens had early been tuned to neutralize as much as possible of Old Sol's most fervently harmful frequencies, and but for their mighty shields every man of the Fleet would have perished long since. Now even those ultra-powerful guards were proving inadequate.

Refrigerators were running at the highest possible overload and the men, pressing as closely as possible to the dark sides of their vessels, were availing themselves of such extra protection of lead shields and the like as could be improvised from whatever material was at hand.

Yet the already stifling air became hotter and hotter, eyes began to ache and burn, skins blistered and cracked under the punishing impact of forces which all the defenses could not block. But at last came the long-awaited announcement.

"Pilots and watch-officers of all ships, attention!" the Chief Computer spoke into his microphone through parched and blackened lips. "We are now at the point of tangency. The gravity of the sun here is twenty-four point five meters per

second squared. Since we are blasting twenty-nine point four we are beginning to pull away at an acceleration of four point nine. Until further notice keep your pointers directly away from the sun's center, in the plane of the Ecliptic."

The sun was now in no sense the orb of day with which we upon Earth's green surface are familiar. It was a gigantic globe of turbulently seething flame, subtending an angle of almost thirty-five degrees, blotting out a full fourth of the cone of normally distinct vision.

Sunspots were plainly to be seen; combinations of indescribably violent cyclonic storms and volcanic eruptions in a gaseously liquid medium of searing, eye-tearing incandescence. And everywhere, threatening at times even to reach the fiercely-struggling ships of space, were the solar prominences—fiendish javelins of frenziedly frantic destruction, hurling themselves in wild abandon out into the empty reaches of the void.

Eyes behind almost opaque lead-glass goggles, head and body encased in a multi-layered suit each ply of which was copiously smeared with thick lead paint, Stone studied the raging monster of the heavens from the closest viewpoint any human being had ever attained—and lived. Even he, protected as he was, could peer but briefly; and, master physicist though he was and astronomer-of-sorts, yet he was profoundly awed at the spectacle.

Twice that terrifying mass was circled. Then, air-temperature again bearable and lethal radiations stopped, the grueling acceleration was reduced to a heavenly one-and-one-half gravities and the vast fleet remade its formation. The automatons and the sun between them had taken heavy toll;

but the gaps were filled, men were transferred to equalize the losses of personnel, and the course was laid for distant Earth. And in the Admiral's private quarters two men sat together and stared at each other.

"Well, that's that—so far, so good," the physicist broke the long silence.

"But is their power really broken?" asked Martin, anxiously.

"I don't know," Stone grunted, dourly. "But the pick of them—the brainiest of the lot—were undoubtedly here. We beat them...."

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Martin interrupted.

"*You* beat them, you mean," he said.

"With a lot of absolutely indispensable help from you and your force. But have it your own way—what do words matter? *I* beat them, then; and in the same sense I can beat the rest of them if we play our cards exactly right."

"In what way?"

"In keeping me entirely out of the picture. Believe me, Martin, it is of the essence that all of your officers who know what happened be sworn to silence and that not a word about me leaks out to anybody. Put out any story you please except the truth—mention the name of anybody or anything between here and Andromeda except me. Promise me now that you will not let my name get out until I give you permission or until after I am dead."

"But I'll have to, in my reports."

"You report only to the Supreme Council, and a good half of those reports are sealed. Seal this one."

"But I think...."

"What with?" gruffly. "If my name becomes known my usefulness—and my life—are done. Remember, Martin, I *know* robots. There are some capable ones left, and if they get wind of me in any way they'll get me before I can get them. As things are, and with your help, I can and I will get them all. That's a promise. Have I yours?"

"In that case, of course you have."

And Admiral Alan Martin and Doctor Ferdinand Stone were men who kept their promises.

[The end of *Robot Nemesis* by Edward Elmer Smith]