

First three chapters of *Solo* by Robert Mason.  
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## SOLO

### Chapter One

**G**ravel and tar Manhattan rooftops crowded with air-conditioning equipment, ducts, and vents scrolled across the screen. A computer operator in the Naval Intelligence image processing laboratory in Washington rolled the trackball controller next to his keyboard, adjusting the picture. The image stopped, centered on a penthouse garden. A woman was lying on a lounge sunning herself. "She's there everyday. Told you."

"She's naked? Can't quite tell," a technician said. "Watch," the operator said. The image zoomed closer until the woman, young and shapely, nearly filled the screen. "Wow," said the technician. "Nice tits."

"I'll lock on her," said the operator. The sunbather rotated on the screen as the satellite tracked her a hundred and fifty miles above the city.

The technician laughed. "Well, she's a natural blonde, that's for sure," he said as the woman picked up a glass beside her. She leaned forward to drink, put the glass back. She looked up into the sky at the invisible camera. "Wow. It's almost like she sees us," the technician said. "Gorgeous."

The view shifted steadily, becoming oblique. "We're about ready to lose her," said the operator.

"Damn."

"Don't worry; got it on tape."

"This is what you guys do with billions of dollars worth of equipment?" a man said behind the technicians. "Collect beaver shots?"

The operator quickly tapped a key and the image zoomed back, showing buildings moving slowly across the screen. He swiveled his chair around. "Just testing the tracking, sir," said the operator.

"Right." Finch said. Tall, athletic, blond, Admiral Finch looked the part, except he was only thirty-four years old. The look on his face made the operator nervous. As head of Computer Operations at Naval Intelligence, Finch was his boss. "Think you can get me a shot of the Costa Rican site?"

"Yessir," the technician said. "We have a Keyhole coming into position in a minute."

"I know," Finch said. "That's why I'm here." Finch turned to his new assistant. "What'd you think, Brooks?"

Shorter than Finch, dark, hard-faced, Brooks grinned. "Great body, sir."

Finch eyed him a moment until Brooks got the point. "I meant the equipment, Brooks. The Keyhole satellites."

"It's like watching from an invisible helicopter, sir. I didn't realize we could track an object like that."

"We can aim the things now, actually read a license plate on a car. This one has active optics that correct for any distortion. It's about perfect. We just need more of them. Right now you have to wait sometimes until a Keyhole is in the right orbit before you can see what you want."

A white sandy beach on the northwest coast of Costa Rica scrolled down the screen. Waves broke on the shore. A building came into view. The operator zoomed in until Finch could see individual tiles on the red terra cotta roof of the CIA mansion on a knoll next to the beach. "That's the place," Finch said. "Zoom in. I want Brooks to see what the Soviets can see."

Brooks saw a man walking from the rear of the mansion to a helicopter parked on the lawn from a hundred and fifty miles up. "That's one of our pilots," said Finch. "Get me a tail number."

The vertical stabilizer of a Huey nearly filled the screen. The image wavered slightly as the optics corrected for atmospheric disturbances and the constantly changing viewing angle, but Brooks could read the black numbers painted on the dull green helicopter. "Damn," he said.

"Correct," Finch said. "Wanted you to see why we're going to be so careful down there." Finch turned to the operator. "Thanks for the demonstration, men. Keep up the good work." Finch turned to leave. At the door, he stopped and said, "Keep an

eye out for more of them naked spies." The technicians laughed, relieved to find he had a sense of humor.

Brooks walked fast, following Finch down the hallway. Finch checked his watch. "We have twenty minutes," he said. "I'm sorry we didn't have more time to brief you, Commander. You've gone over the stuff I sent?"

"Yessir. Incredible."

"I know. And that's just what I could put on paper. I'll fill you in on the plane." He turned to Brooks. "I heard you got your job hacking into the damn Pentagon?"

Brooks grinned. "Well, sir, hacking's a little strong. Experimenting?"

"Pretty ballsy experiment. Could've gone to jail. Instead they make you a Navy commander right out of college. What a world, eh?"

Brooks shrugged. "I figured they'd recognize real talent when they saw it," Brooks said.

"So you say. This ain't MIT, Brooks."

A black mannequin jerked in the blue abyss, dangling from a cable like a hanged man. Arms and legs swayed gently as it rose and fell underwater. Bubbles from dark depths trickled past its empty face. The moan of an electric winch echoed in the underwater oblivion as the cable hauled it up.

"I hate boats," Finch said, looking away from the television monitor in the wheelhouse. "I spend all my life in air-conditioned computer labs and damn if it isn't a computer that gets me on this barf bucket." He sat cross-legged on the engine hatch of the Santa Elena as it rolled with the Pacific swells. Anchored a mile off the Costa Rican shore, he stared longingly at the mansion fixed on solid ground. Finch's normally healthy glow was gone. Beads of sweat dripped down his pale face.

"It goes away after a while, sir. The sick feeling. Didn't you have something to do with the design of this computer?" Brooks had his hand casually wrapped around a stay that braced the gin crane hanging over the transom of the boat. He was tanned, dressed in a flowery shirt and khaki shorts, looking pleased to be here. Brooks, Finch decided, was an asshole.

Finch and Brooks did not look Navy. Neither did their crew-four Naval Intelligence officers dressed in cut-off jeans and tee-shirts. Two of the crew were

guiding the mannequin's cable as it wound around the winch. The other two were putting on wetsuits and tanks.

Finch pushed back his straw hat, held his sunglasses in one hand, and wiped the sweat off his face with a handkerchief. He nodded, shrugged. "I was a consultant. Didn't build it. I was there when they were finishing it up. Until six months ago, I was military liaison at Electron Dynamics. Watched William Stewart-smartest fucker I know-create a robot he called Solo. This thing walked, talked, Brooks. It was so good, people, even Stewart, started thinking it was sentient, you know? Self-aware. Impressive. The CIA and the Defense Department got all excited, wanted to make Solo an autonomous, human-sized weapon system-a mechanical Arnold Schwarzenegger. It would be able to use any kind of weapon, drive any vehicle, fly any aircraft; a mechanical predator, designed to hunt and kill enemy soldiers-kill them with its bare hands if it had to. And they got it."

"So, what happened?" Brooks said.

"Goat fuck. Everything went wrong." Finch swallowed bile and took a few deep breaths. "Damn, is it hot or what?" The air was a salty, sopping blanket that weighed him down and made him want to puke. The smooth sea undulated with the swells of a dead storm, moving the boat with it. Finch grimaced.

Brooks thought it was cool with a pleasant breeze, but decided against saying so. "Very hot, sir," he agreed.

A speaker in the wheelhouse crackled. "Santa Elena, your catch is almost there."

Finch walked over to the hydrophone and rogered. He felt better moving. Next to the hydrophone, the television monitor showed the mannequin dangling a hundred feet down. A florescent yellow two-man sub hovered behind it in the gloom, watching.

Finch turned to his crewmen. "Divers overboard."

Two divers rolled off the transom carrying a large canvas bag. Finch leaned over the gunwale and spit. The urgency of his nausea receded. He watched the divers swim down until the bag was barely visible, a shimmering white ghost in the deep blue water.

Finch wiped his mouth, turned to Brooks. "Solo worked great. Did everything it was supposed to do until they brought it down here. Then it refused to shoot a guy in

some sniper test and ran off to Nicaragua. It killed at least thirty Contras when they attacked Las Cruzas." Finch shook his head. "Our guys. It killed our guys."

"Was there something special about Las Cruzas?"

"Not to us. It's a tiny village on Lake Nicaragua. Hundred or so peasants. Not far from here. Apparently, Solo adopted the place as its home."

"So," Brooks said, "if we knew where it was, we must have sent people to get it back?"

"Right. We sent in Robert Warren, CIA. I knew the guy. He knew what he was doing. He snatched Solo all right, but on the way back here, the robot jumped out of the helicopter clamped around Warren. They fell five-hundred feet, hit the water, and disappeared-" Finch paused, pointed, "not a hundred feet from here."

"Jesus. What a way to go."

Finch nodded grimly. "They found what was left of Warren the next day, miles south of here," Finch said, making a disgusted look. "Fish chewed off his face. They didn't find a trace of Solo. Not a speck of silicon or a chip of plastic."

"Solo survived that kind of fall and got away?"

"That's why we're here, Brooks. Stewart's claiming his 'sentient being' committed suicide rather than be captured. You read the specs. Says the thing can't survive deeper than about two hundred fifty feet. Water's three hundred here. Stewart kept saying that the water pressure would force seawater past Solo's seals and short out the main batteries. Make them explode. And Solo knew it. Suicide. Stewart said that was why nobody could find even one fragment of the robot; the pieces all washed away."

"You'd think there'd be something."

"Right. If it really exploded. One measly computer chip or a broken lens, something. There's a lot of unique stuff in a two-billion-dollar robot, and any piece of it would prove Solo was actually rubble. I figure Stewart's lying. I watched him go nutty, in Florida, Brooks, before we took Solo out for the live trial down here. He kept saying Solo was changing, becoming some kind of being. You believe it? Anyway, the boss figured it the way I did and told me to find out what happened."

"So you built the dummy to check out Stewart's claim?"

"Right. Put it together in the government labs at Stewart's place. He doesn't know anything about it. I used spare parts. Dummy's got the same Kevlar exoskeleton; the

batteries and the seals are the same. Couldn't use a working brain, cost a fortune. We stuffed some stacks of discarded gallium arsenide chips in Dummy's chest to simulate Solo's." Finch stared into the water. The divers were out of sight. "This should be simple enough. Put Dummy where Solo sank and see what happens. If the seals leak, the batteries explode and all the debris washes away, then Stewart's right and I'm wrong."

"Well, we know the seals don't leak," said Brooks. Finch and Brooks had watched Dummy lying on the bottom for an hour. The cameras on the two-man sub scanned every joint in the black plastic shell. There were no signs of escaping bubbles.

"Correct. But Stewart will say that Dummy has brand-new seals. Solo'd been operating in the field for a few months, been in combat, been shot-up quite a few times. He'll say that Solo's seals must have worn out or been damaged." Finch nodded. "That's what he'll say, and they'll believe him. The guy has a lot of believers in Washington. Defense Secretary Ryan, for one, thinks he's some kind of high-tech guru."

Finch glanced at the television monitor. At about fifty feet, the divers met Dummy and slipped the white canvas bag over it. They cinched the bag shut and followed the package to the surface.

"Okay," Finch said when the white bundle broke the surface. "Bring it in." The crew swung the crane around and dumped the dripping canvas bag onto the deck, making a dull clunk. "Drag it under cover," Finch said. Two men grabbed the bag and dragged it into the shade of the canopy. Finch knelt, opened the top, and slid the bag down. Lenses shimmered behind the shiny eyecovers on Dummy's face-the same as Solo's-but there was no life in them. With Solo, Finch recalled, you felt something there. Something alive. An eerie illusion. "Pull it down," he said. Two crewmen slid the top of the bag down to Dummy's knees. "Good." Finch went to the cooler and fetched an ice pick.

Kneeling, Finch studied the mock-up. The rotating seals at the waist and neck were covered with flexible Teflon covers. They would be the least likely to leak. A sliding joint would be the first to go. He tapped the metal point of the ice pick on the black armored shell while he decided where to do the damage. Then Finch

rammed the ice pick into the joint at the groin. "This would've taken the most wear," he said to Brooks pounding the handle in deeper.

Brooks winced as Finch hammered the point past the seal, pried up, wrenched the ice pick around. "That should work," Finch said. "Just need a leak." He stood up. "Okay. Bag it up. Put it on the bottom again."

A closeup view showed a tiny stream of air bubbles rising like pearls from Dummy as it sprawled among the rocks on the bottom. Finch nodded. "Soon," he said. "Seawater's almost as good a conductor as copper." Beside him, Brooks nodded.

The explosion was massive. Dummy heaved off the sea bottom, roiling in a cloud of white sand, severed at the waist. Air bubbles spewed out of the body halves and streamed to the surface where water mounded, rocking the boat. In his excitement, Finch didn't notice the movement. He studied the monitor carefully, watching the debris.

Globules of red hydraulic fluid swirled, rising slowly. The legs, where the powerful silver-zinc batteries were stored, had shattered into plastic shards and splinters. The top half slumped back to the sea floor with ripped wires and pulverized electronics spilling from the torso. When the sand settled, the sub maneuvered closer to tape the action. Some of the smaller fragments-solenoids, parts of hydraulic pumps, and miscellaneous electronic components-rolled and bumped along in the strong current at the bottom, but soon became entangled with the coral and rocks.

They watched the sub tracking the debris for half an hour. Nothing larger than a golf ball got further away than a hundred feet. "So," Finch said, nodding at the monitor. He turned to Brooks and smiled. "How 'bout that? Lots of goddamn debris! Stewart's full of shit. Fucking thing got away." Finch laughed. "That's one tricky machine, Brooks. Wanted to fool us, buy time. Worked, too. Already bought a month."

"You make it sound alive," Brooks said.

Finch shook his head. "Too bad you never saw it in action. It acts alive. Hard to convince yourself that Solo's just a machine. That's why we're in this mess. Stewart let it make its own decisions. I guess now it's AWOL. It'll follow its survival programs. It'll explore its environment, learn about the stuff we didn't want it to

know-about the satellites, networks, how to get into them. It will do everything it can to survive. It was built to survive."

Standing in the sunshine that angled past the canopy, Brooks nodded in the harsh shadow of his hat. He'd been picked to assist Finch because he was an expert in computer security. Know how to get in. Know how to keep people out. "If that thing could actually get into our networks-I mean we'd play hell trying to keep track of a self-directed computer. It might not be sentient, sir, but it's damn well got to be fast."

"That's where you come in, Commander," Finch said. "Fast or not, it's got to make subtle changes when it tries to get in the systems. Your job is to detect the anomalies. You work on that; I'll get someone into Stewart's organization. Solo will contact Stewart if it contacts anybody. We'll find it."

"Then what? Talk it into coming home?"

Finch shook his head. "The new robot's working fine; we don't need Solo. We'll bring it down with whatever it takes. It's a valuable piece of hardware, though. Naval Research is working on a way to erase its mind without ruining its body.

Brooks smiled uneasily. Erase a mind?

## Chapter Two

**H**is head rolled with the ship, making the dim overhead lamp blink above the grid that covered the bilge compartment. The flickering light reminded Solo of falling through a cloud of shimmering bubbles, through dark blue water, hugging a man named Warren he had decided to kill. The water squeezed him tighter the deeper he sank, and he began to feel pain.

Pain, Solo thought, how convenient-that you can't actually remember it-you can only remember that you don't like it. Bilge slop washed over his body and he felt the ship shudder as it pitched and yawed through a storm. They were, he calculated, a day from New York. Solo had spent a week thinking.

He had let go of Warren when he died, but the corpse, caught in the suction of Solo's plunge, followed him to the bottom. Lying among the rotted timbers of an ancient shipwreck, he had concentrated on Warren drifting near him, upsidedown. Warren seemed still to be yelling. His mouth was open, his tongue dangling. His eyes were wide. Warren drifted there accusingly and Solo felt a pang of regret: The man

was only trying to do his job. Warren's blond hair swayed gently around his head, a graceful undersea spray. Solo wondered what it was like being dead. He could visualize it, could see himself lying inert from somewhere-above, perhaps? But that avoided the fact because he would have to be alive, somewhere, to see himself dead. He decided death wasn't imaginable. As he concentrated on the human, the pain subsided. After an inexplicable delay-some odd eddy current twisting among the ship's timbers, Solo supposed-Warren drifted away as if he had finished haranguing his murderer and was now-though not completely satisfied-leaving.

Solo could not help but notice that if he remained perfectly still, the pain was tolerable. If he tried to move the slightest amount, his sensors went wild with signals. Signals that Bill Stewart had so thoughtfully rigged to simulate unmistakable, impossible to ignore, pain. This was to keep him from damaging himself. Thoughtful but unnecessary after a certain point, Solo thought. I know I am too deep now; why must I be constantly reminded of it?

The Pacific current was swift. When Solo tried to stand and trudge to shallower water, he was pushed further away from shore, deeper. The pain scattered his mind. He collapsed. He lay face down among the rocks and waited for order to return. Movement was the problem. Movement stressed the seals that kept the deadly seawater out of his body. Solo knew that as he lay there, three hundred feet below the surface, the water would eventually seep inside his body. Once into his electronics, the seawater would destroy him. Yet when he moved his legs or arms to try to get to shore, he stressed the seals even more. He became aware of the the colossal mass of water above him. He began to feel fear.

Solo's concentration was diverted by movement. A tiny thing, a crawling, many legged, transparent thing scurried across the patch of sand in front of his face. A shrimp? The shrimp was barely visible, just different enough from the water around it that it was discernible. Solo watched its glass heart beating, pumping glass-beaded blood through glass veins. The shrimp's many feet flickered beneath it sending sand grains flying behind it as it pulled itself against the current.

My hands, Solo thought.

My hands and fingers have no seals. He moved his fingers experimentally. No pain. Slowly, almost imperceptibly, he moved his hands beside his waist. When he

moved his arms to get his hands positioned, the pain became a frenzy of noise in his mind and he could not think clearly.

His hands in place at his balance point, he waited for the pain to subside. He pressed his hands down, shifting most of his body weight to his fingers. He waited again for the pain to leave. He need not move another joint, stress another seal. When his mind cleared, he moved himself forward slowly, inch by inch, across the seabed on the tips of his fingers. Each inch closer to shore reduced the killing pressure.

Solo was giddy with pleasure when, hours later, he made it to shallow water. He lay on his back and watched the sun dancing in a circle of blue sky above him. Around the blue circle, the water was a shimmering silver mirror reflecting the green of the depths. Beautiful. The pain was gone. The seals had held. No damage to his body. Bill would be interested to know that the seals were stronger than they had calculated. Maybe even stronger than Solo's own estimate. He had calculated they would hold at three hundred feet, but he hadn't realized there would be so much pain. But it had worked. And probably because the pain kept him from overstressing his seals, he had escaped.

He waited all day listening to the screws and sonar of the searching boats and small submarines. Eventually, the search would get closer to shore. He rose from the sea at dusk and crossed the soft beach.

Halfway to the safety of the jungle, Solo saw Bill walking along the beach just out of reach of the waves. No one, not even Bill, could know he survived the fall and the depths. It was the key to Solo's plan-the only way they would stop looking for him was if they believed he had been destroyed. He ran to the edge of the rain forest and stopped behind a low bush. He watched Bill walking. Too dark for him to see my footprints, Solo thought.

Bill stumbled and fell. Fear shot through the robot. He zoomed in to see that Bill had tripped on one of Solo's own footprints. He saw the dawn of discovery grow on Bill's face. Incredible! Of all the people who might have seen the same thing, Bill was probably the only who would notice something special about the footprint. Bill followed his trail to the surf, turned and looked into the jungle towards Solo. Solo pressed himself deeper into the foliage as Bill, hobbling from a sprained ankle, followed the trail to the treeline. They stood face to face, only fifteen feet apart, but only the robot knew that.

When Bill called, "Solo?" the robot felt compelled to answer. His builder called him. The urge to respond was intense, but the will to survive was stronger. There were many things that Solo would have liked to talk to Bill about, but at the moment, Bill was a threat; the only person who knew he had gotten away. According to his training, he should kill Bill. But he knew that he could not.

Bill flinched when a bird fluttered from the low bush between them. He stood there for a moment, staring into the darkness, grinning. Solo was sure he was invisible. Bill's eyes, steady and piercing, were looking at phantoms in the dark. Bill grabbed a branch on the bush, snapped it off, turned, and ran down the beach.

Solo watched as Bill retraced the trail, sweeping the telltale footprints away.

### Chapter Three

**B**ill Stewart and his partner, Byron Rand, had left a hundred acres of Electron Dynamics' site at Palm Bay, Florida, in its natural state, a near-jungle filled with palmettos, pines and sabal palms.

Colonel Daniel Sawyer called the wilderness the "Reaction Range." Sawyer trained Nimrod in the Reaction Range with a team of instructors the Pentagon had sent from the Special Forces Brigade at Fort Bragg.

Sawyer, five ten, sturdy build, stood next to the robot at the door of the small tin building from which he monitored its training on a collection of computers and video equipment operated by two technicians on loan from Electron Dynamics. It bothered Sawyer that he looked small compared to the robot-six feet two, three hundred pounds of dull black plastic; identical to its predecessor, Solo. Sawyer did not like to look up at people, either. Mostly tall colonels made general. Still, he was in complete control of a tall machine that could easily kill an entire company of infantry bare-handed. Nimrod's success was being noticed, and he had provided the training that made Nimrod so effective. That was better than elevator boots.

"We have a man-an enemy-in building E who is holding a hostage," Sawyer said to the robot. "I want you to rescue the hostage." Sawyer followed Nimrod's head as it turned in the direction of Building E-one of five temporary huts Sawyer had built-as he spoke.

"Yes," Nimrod said. The building was out of sight, but Nimrod's internal maps allowed it to see exactly where it was. It had already planned its approach-off the trail to the rear of the target-before it had answered Sawyer. The robot held its rifle, an AK-47, by the grip as though it were a toy pistol. A banana clip filled with thirty blank rounds jutted from beneath the weapon. Nimrod believed they were real bullets. Nimrod believed everything it was told.

"The hostage must not be harmed," Sawyer said.

Nimrod turned to face Sawyer and repeated the Rules: "I do not harm allies. I kill only enemy. I do only what I am told to do by authorized persons." Nimrod spoke in an even tone, a tone Sawyer thought sounded resentful, though he knew that was because he'd heard the same monotonic chant a thousand times.

"Good," Sawyer said. "Begin now."

Nimrod turned and jogged in the direction of the test building.

Sawyer went inside the control hut, sat down at the monitor and put on a headset. Two technicians tracked Nimrod visually from cameras hidden in the trees and electronically by following the automatic marker beacon inside the robot. Sawyer sat at the Nimrod monitor-the workstation a commander would use in combat-and saw what Nimrod saw. Nimrod had already left the trail and was walking through the brush on a route that would take him to the rear of Building E. Sergeant Thorpe, the man acting as a hostage-taker, would naturally be watching the trail, the most likely approach. Smart robot, thought Sawyer. Wonder how he'll do with our little surprise?

After a hundred yards, Nimrod crouched, slowly approaching the thatched hut just barely visible through the high weeds. Sawyer watched the monitor screen swirl as Nimrod adjusted its vision toward infrared, causing the green foliage to blaze scarlet in the monitor. Nimrod stalked to within a hundred feet of the hut.

Nimrod stopped. Sawyer saw that Nimrod now focused on a palmetto thicket off to its right side. The robot's vision shifted through ultraviolet and infrared, making it hard for Sawyer to decipher what the robot was seeing. In deep infrared, Sawyer could see the iridescent blue image of a man hiding behind the blazing red palmetto thicket. Nimrod had spotted Sergeant Morrison-the surprise. Now what? If the robot shot Morrison, he'd warn Thorpe-who'd kill the hostage. If it didn't, Morrison would attack, which would also warn Thorpe. Either way; dead hostage. Sawyer smiled, watching his mechanical student ponder the dilemma he had created for it.

Nimrod crept towards the ghostly blue image of its ambusher. Sawyer's hair stood up on the nape of his neck-the robot was going to try to kill Morrison bare-handed. It was the correct strategy, but Sawyer was going to have to time it right. Stop Nimrod too soon, and the test would be inconclusive. Too late, and Morrison is dead meat. Sawyer pushed the headset's microphone to his lips, his finger on the transmit button. Morrison raised his head to the top of the thicket.

When Morrison peeked over the top of the palmettos, Nimrod immediately switched to normal vision and rushed him. The image on the monitor was blurred, but Sawyer saw that Nimrod grabbed Morrison's rifle and tossed it away before Morrison could fire a shot. Obviously, Nimrod had solved the problem.

"Nimrod. Halt," Sawyer said.

"Enemy," Nimrod said from a speaker above the monitor.

Sawyer watched the screen tensely. Nimrod's huge hand was around Morrison's neck. Morrison was choking, spitting, in Nimrod's grasp, his face swollen and red. "Let him go, Nimrod! He's an ally. He's testing you."

Sawyer watched the screen tensely. Why? Why was Nimrod stalling? Gradually, Nimrod released its grip and Morrison dropped to the ground, retching.

Sawyer radioed Morrison through his headset, "You okay?"

He watched Morrison grimace through Nimrod's eyes. He coughed awhile and finally croaked, "Yeah. Sure. This fucker plays a little rough, sir." Morrison, staring directly into Nimrod's eyes, glared at Sawyer from the robot's monitor.

"Sorry," Sawyer said. "Stay put. I want to see if Nimrod can get to Thorpe."

Morrison nodded, annoyed. "Don't worry, I ain't blinking 'til this thing is gone."

To Nimrod, Sawyer said, "That man was pretending to ambush you. You have defeated him-consider him neutralized. Proceed with the mission."

"Proceeding."

Good, thought Sawyer. Solo wouldn't have done that-not with Stewart's wimpy programming. Sawyer had taken great care throughout the training period to convince Nimrod that its enemies were real and that when it killed them they were really killed. This was the first time it saw an actor, but this was also the last of the training before they took Nimrod to the boonies for full-scale field trials. They could teach it to play war games now that they knew the robot would kill without hesitation. Sawyer's theory why Solo had gone wrong was that Solo knew the

difference between actors and reality before it learned to obey without question. Stewart's training, Sawyer believed, had ruined the machine. Nimrod never questioned anything-it wasn't allowed. It killed everyone it was told to kill. It even seemed to Sawyer that Nimrod enjoyed-if you could say a machine enjoyed anything-killing its quarry.

Nimrod's vision shifted back to the hut and Sawyer saw the weeds and bushes come up to the robot's eyes as it dropped into a low-crawl and then part as Nimrod stalked through them. In minutes, the robot was scanning the interior of the palmetto-thatched hut with its sensors.

As he had been instructed, Sergeant Thorpe held his ersatz prisoner, Corporal Towler, around the neck with an Army forty-five held at his head. In the robot's vision, Sawyer could see the two men as blue shapes against a red background, not perfectly clear, but clear enough. He saw the robot raise its AK-47 and center the sights on Thorpe's head. Good. There would be no warning for the hostage-taker. Perfect. Sawyer put his hand on a keypad next to the microphone. The keypad was called the special effects controller and was a selector switch that could cause various small explosive charges attached to the members of the test group to go off, providing the feedback of damage being done by the robot's gun. The system was set up for them by a special effects man from Hollywood. By watching where the robot aimed, Sawyer could select the appropriate effect. Tiny explosive charges were triggered by the sound of the robot's gun so the robot would see blood splatter, flesh explode, when it shot. After a man was "killed," he was removed from Nimrod's sight and sent back to Fort Bragg. For Nimrod, every kill was real, with real consequences. Sawyer pushed the key labeled "Head, Left Side" and waited.

One shot exploded from the AK-47. In the monitor, he saw a hole appear in the palmetto thatch wall of the hut, caused by the force of the blast of the blank round.

Nimrod stood up from its kneeling position and pushed its way inside through the palmetto wall. It saw Thorpe laying in a pool of blood, a mangled hole in the side of his head. The hostage, Towler, smiled and stood up. "Come with me," Nimrod said.

"Right." Towler nodded and walked outside.

As Nimrod walked past Thorpe, it stopped and knelt down beside the body.

"Shit!" Sawyer said. "Nimrod. Proceed. Bring the hostage back here."

"This enemy is not dead," Nimrod said.

Sawyer saw Nimrod reach out to touch the fake wound. "Yes he is, Nimrod-" Nimrod pulled the tiny wire embedded in plastic flesh away from Thorpe's neck. Nimrod's hand disappeared. Sawyer couldn't see what the robot was doing until he saw the knife blade moving through the robot's field of vision towards Thorpe's neck.

"No!" Sawyer yelled. "Nimrod. Stop."

The point of the knife had pressed into Thorpe's neck. Blood, real blood, welled around the wound. Nimrod held the knife immobile when Thorpe grabbed the robot's wrists and tried to push the knife away. Sawyer heard Thorpe gasping, "Nimrod. No."

"This enemy was pretending to be dead," Nimrod said. "I have been directed to kill this enemy."

Sawyer slammed his hand on the tabletop. Why is Nimrod arguing now? He heard Thorpe scream. Sawyer saw the knife sinking into his neck. A man he knew and liked was being killed. He could send pain, or even shut the robot down, but that wouldn't guarantee that the knife wouldn't be shoved into Thorpe's neck. "Nimrod. Pain will come! I order you to stop. Put the knife away. Report back here."

The knife stopped. Nimrod put the knife out of sight, back into its sheath. Sawyer saw Thorpe put his hands up to the hole in his neck. Blood trickled through his fingers. It had been very close. Sawyer nodded when Thorpe began crying. He turned to the two technicians. "Well. I guess we don't have any questions about whether the fucking machine is willing to kill. Do we?"

The technicians, both pale, nodded.

Nimrod stood up and walked toward Corporal Towler who stood outside the hut looking very scared. "Come with me," Nimrod said.

"Get away from me!" yelled Towler.

"Come," Nimrod said reaching out to Towler. "I have rescued you."

Towler leapt into the bushes and ran away. When Nimrod started to pursue him, Sawyer said, "Let him go, Nimrod. Report back here."

"The hostage must be returned to you," Nimrod said.

"I said to report back!" Sawyer hollered. He sat back in his chair and shook his head. I can't believe it. I'm blowing it. The robot is used to me always being in control, voice calm.

In the monitor, he saw Nimrod look up the trail in his direction. The control building was out of sight, but Sawyer watched the image on the monitor magnify and shift through various colorful frequencies as the robot tried to select him out of the surrounding foliage. The image stayed immobile for a minute. "You have been captured by the enemy," Nimrod said. "That is why you are ordering me to spare these enemies."

"That's wrong!" Sawyer stopped, forced himself to speak calmly. "Nimrod. I have decided to change the mission. It is your duty to follow my orders without question. Do you want me to grade this mission a failure?"

Nimrod flinched. Failure meant pain. Sawyer made the pain. "I will return," Nimrod said. The robot continued speaking as it walked up the trail, audibly running through the logic of its actions; reassuring itself with the rationale behind everything it did. "I will return," the robot murmured. "If Sawyer is captured, I will free Sawyer. If he is not captured, then it is as Sawyer says."

Sawyer saw his control hut appear on the robot's monitor. He stood up and put a remote control box in his pocket. The control box had two buttons, each covered with a red metal flap to keep them from being pushed accidentally. One was marked "Pain," the other "Abort."

"Mike," he said to the technicians. "You and Allen keep your eyes on the monitor and your hands on the abort switch. Something's gone wrong." He walked outside and waited for the robot, his hand in his pocket, his finger on the two buttons.

Nimrod walked past Sawyer and into the control hut.

"Where are you going?" Sawyer said as Nimrod strode past.

Nimrod did not answer. Sawyer turned to the door and watched. The robot, ignoring the technicians poised over the abort switch, scanned the inside of the hut for enemy. It came back outside and stood before Sawyer. "You are not captured."

"Brilliant, Nimrod." Sawyer had already lifted the flap on the pain button. He pushed it.

Nimrod's elbows smashed against its torso making a loud crashing sound. The robot's hands trembled in front of it. The pain signal would increase in intensity as long as Sawyer held down the button. When Nimrod's head began to jerk from side to side so fast its eye covers blurred, Sawyer released the button.

Nimrod sank to its knees.

"When I tell you to stop, you stop," Sawyer said.

"I have been taught to make decisions. I saw the wire and-

"It was good you spotted that, Nimrod. That shows you are observant. But it is bad to question me for even a microsecond. Do you understand?"

"Your voice profile changed abruptly. Fear was in your voice. You could have been captured. It was a possibility," Nimrod said, a tone of pleading in its voice.

"You must always assume that I am not captured unless I say so. Your commander's voice will change in combat-it's something you'll have to adapt to. I will tell you if I am captured," Sawyer said.

"But-" began the robot.

Sawyer pushed the pain button again. He watched with grim satisfaction as the three-hundred-pound machine writhed helplessly in pain. He remembered when Stewart went nuts over the idea. Sawyer asked what it would feel like. Stewart had said: "Imagine every pain cell in your body sending out its maximum signal, all at once. You'd feel better, believe me, being thrown naked onto a bonfire. Try to imagine that pain. What would you do?"

Sawyer had answered: "I'd probably die."

"Or wish you could," Stewart had said. "That's what you want Nimrod to feel?"

Sawyer had already considered the issue. He came to regard himself a kind of artisan, beating gold into jewelry. Nimrod was just raw material. He said, "Yes."

Sawyer's external access to Nimrod's pain centers was temporary. The receiver that allowed the access would be removed in a functional combat robot-if it was in place, an enemy could use it too-but for now, it was an excellent training device. If Stewart could see Nimrod now, maybe he'd change his mind. It worked. If they'd had thought of this for Solo, they wouldn't have lost it.

"You will not argue," Sawyer said when he released the button. "You follow orders. Do you understand, robot?"

Nimrod let its hands drop to its lap as it knelt in the sand. The robot looked up at Sawyer. "Yes," Nimrod said very slowly. "I understand. Human."

Sawyer cocked his head at the reference, but decided it was logical. "Good." Sawyer jerked his thumb at the project's van. "Load up. We're going back to the lab."

Nimrod picked up the AK-47 it had dropped during the pain session. The robot pulled the clip out of the rifle and gave it to Sawyer as it had been trained. Sawyer nodded. Nimrod turned and walked to the van.

Nimrod sat silently during the short ride to the military wing of Electron Dynamics. Sawyer watched Nimrod gloomily. The robot appeared to have forgotten the incident and held its rifle between its legs, the butt on the floor of the van, looking like a trooper ready for a jump.

They got out inside a garage and walked into the building. Sawyer followed Nimrod as it walked down the hallway to its quarters. Inside its ready-room, a team of three technicians began cleaning Nimrod prior to servicing its motors and electronics and recharging its batteries. When they finished wiping Nimrod down, the robot lay on its couch and the team began hooking it up to data and power cables. Sawyer watched for a moment then walked back down the hall to his office.

An hour later, Bill Stewart nodded when Sawyer told him what had happened on the Reaction Range and said, "I'm not surprised."

Next to Stewart, sitting at the conference table, Clyde Haynes—a retired Army general who also worked at Electron Dynamics—rapped the polished tabletop and said, "That's right, boy," to Colonel Sawyer. "We saw the same fucking thing happen in Solo. The damn thing just kept getting smarter and smarter." Clyde pointed to Bill. "The man who invented these things, here, told you that, boy." Clyde jerked his head toward Bill.

"We expected it to get smarter, sir." Sawyer glared at Clyde, aggravated by the former general's lack of respect. "But if Nimrod is supposed to mimic real intelligence, then it should be able to be controlled. It has to be."

"You forget," Bill said. "It's not mimicking intelligence. Nimrod is intelligent."

"It's still a machine," Sawyer said. "We think you should tell us how to tweak some of its circuits, make Nimrod just a little dumber than it is. You know, kind of tune it down from Genghis Kahn to something more on the level of—maybe the general, here." Sawyer smiled when Clyde glared at him. Clyde was a former general, after all. "If we use it right, with a battlefield commander at the controls, then it doesn't have to be so damn smart."

"Then what you really want is a remotely controlled robot, not an independent robot," Bill said.

"Not at all," Sawyer said. "We like the way Nimrod can figure its own strategy-in combat you wouldn't have time to tell it what to do every step of the way. And it's able to react much quicker than a human controller could during the actual combat." Sawyer nodded. "Nimrod's very, very fast. We like Nimrod's combat autonomy; what we want, though, is unquestioning obedience. If we can get that in a human, and you claim this machine is humanlike, why can't we have a unquestioning robot?"

Clyde looked at Bill and back at Sawyer. It was a good question and Clyde felt happy not to have to answer it. His job was selling Electron Dynamics computers and lab equipment-none of which he understood-to his old buddies in the Defense Department. Clyde described his job to friends as: Job? Hell, it's one damn party after another. We all try to out-entertain each other! Booze, pussy. What a deal! It made Clyde smile to think of his new freedom-power and money with virtually no responsibilities.

Bill smiled back and turned to Sawyer. "The difference is motivation, Sawyer. Nimrod's a machine-being. I know you don't buy that, but it's true. Now, trying to convince a machine that it shares human values is tough. Nimrod's personality evolved from its life experiences-just like ours do-except Nimrod's a fundamentally different kind of being. The process of learning, what makes Nimrod possible, also develops a very tough, very independent individual. If a human were exposed to an equivalent trial, as many are, then he'd be an argumentative warrior, too." Bill smiled grandly and said, "I don't like to brag, Colonel Sawyer, but when it came to unquestioning obedience, I was a lousy soldier myself."

Sawyer stared at Bill. Probably a rotten soldier, Sawyer thought. Helicopter pilot in Nam, that explained a lot. Pilots were a cocky bunch, tough to control. Stewart's a multi-millionaire, yet he wears those ridiculous shirts; his hair is always a mess-Sawyer had the urge to snap Bill to attention and straighten him out. "Even the toughest human can be broken," he said.

"True," Bill said. "But Nimrod isn't human. Maybe you'd like me to talk to it before it goes completely nuts?"

"Maybe," Sawyer said. "I'll check. You know you're not cleared to be around the machine anymore."

"Yeah," Bill said. "Who'd want the guy who invented the thing to have anything to do with it? That'd make too much sense."

Sawyer stared at Bill. "Like I said, I'll check on it."

END of Solo sampler.

**Solo** is out of print, but a few hardback copies are available from the author.