

ANALOG APRIL 1973

MOON ROCKS

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*If hell can be defined as the loss of everything you've hoped for,
then even the courtliest, most civilized kind of war is hell!*

The rocks have been lying on the Moon for two and a half billion years. Twenty-five million centuries before Joseph Davino was born, a small asteroid scraped the lower slopes of the lunar Apennines and smashed into the southern edge of Mare Imbrium. Rocks and boulders flew across the surface of the Moon and sat there in perfect, undisturbed silence until a machine rolled across the dusty landscape and flashed a message at its controllers on Earth. Rocks of high-grade gold ore are lying on the surface of Mare Imbrium near the border of the region dominated by the European Economic Community. There are no tracks within five kilometers of the site. No one in the E.E.C. knows the ore is there.

"You'll be inside their radar range a hundred kilometers before you reach the site," Colonel LeFarge says. "You'll have to pick your way through the foothills until you're almost on top of it. You'll have a double supply of consumables and I'll have Wild Bill take a supply caravan out and pick you up at Base Six. I thought about sending out a diversion but I decided you'd have a better chance if we set things up so you could take your time in the foothills."

Major Joseph Davino is a pleasant, cosmopolitan man who still feels warm and nostalgic when he thinks about the books about space travel he read when he was a child—books in which it was generally agreed that no one would ever fight wars over gold mines on other planets. His three-year tour of duty will be up in four months and he already knows Washington is planning to follow the normal program and replace him with a new volunteer. His work on the Moon has been competent but undistinguished and he has one black mark on his record: he let an enemy combat team slip past a perimeter he was guarding and they managed to pick up six hundred pounds of unrefined gold ore and cripple a million dollars worth of high-grade equipment. Colonel LeFarge is handing him a difficult, nerve-wracking job but they both know the colonel is giving him a break, too. The automated exploration vehicle has stumbled on a strike that looks like it may be one of the biggest finds in the history of lunar exploration. If he can sneak into the E.E.C.'s turf and snatch it away from them under their noses, the computer jockeys in the Pentagon will probably listen to the colonel's recommendation and give him the only

reward he wants—three more years in which he will be two hundred and forty thousand miles away from dirty skies, dirty wars, short rations, and all the violence, frustration, and despair that seethe across the beautiful globe hanging above the lunar landscape.

Major Joseph Davino executed his mission with superlative skill and an outstanding exhibition of the qualities that make an officer suitable for combat on the lunar surface. His intelligence and his careful attention to detail demonstrate that he is the kind of tested officer we need in our forces on the Moon. It is recommended that his request for a second tour of duty be approved...

Major Davino hates planes, guns, and all the nit-picking restrictions of military life. He spent ten years in the Air Force after he graduated from college, however, and he transferred to automated ground vehicles and spent two years in a grueling training school when it became obvious the United States didn't need any more jet pilots on the Moon. Every year he spends on the Moon is one more year he doesn't have to spend on Earth. If he can win another tour of duty on the Moon, he may even be able to stay on the Moon until he retires.

There is also a woman—a doctor who has a permanent berth on the Moon because she is a leading expert on lunar physiology. She won't go back to Earth with him if he has to go and Major Davino doesn't blame her.

Three days after he leaves his home base, Major Davino is still creeping across the surface of the Moon. Four fully armed robot vehicles are spread out around his command vehicle in a large semicircle. Four screens are lit up on his control panel. Each robot vehicles has to be maneuvered through the foothills as carefully as he is maneuvering the command vehicle.

The foothills are a jumbled mass of rocks, craters, and low hills. The terrain can hide him from the E.E.C. radar if he is careful, but the Europs will know he is coming as soon as he lets them pick up one blip on the screen mounted on the slope of Mount Ampere. Anything that moves stands out on the lunar landscape like a ship on an empty ocean. Robot scouts will start forming a circle around the place where the radar picked up the blip. The nearest European combat team will start moving into position. Electronic detectors will start hunting for tracks that contain recent traces of exhaust fumes and vented CO₂.

The robot vehicle on his left passes behind a rock. The screens blank. The muscles in his back and legs tense.

The vehicle on his left is Gun Buggy Three. It is about five hundred meters away and it is the only gun buggy he can see. All the signals traveling between him and his squadron have to be relayed through Three. His vehicles are all traveling on automatic until Three creeps past the rock and resumes contact.

A well-placed enemy observer would know he is now out of contact with his squadron. He has fought six hundred missions in the computer simulator and he has usually picked, a moment like this when he has been the ambusher. His emotions

responded with a rush of pleasure every time he hit the main link in his opponent's commo chain during a temporary blackout. His simulated gun buggies swept in before his opponent could re-establish the chain and the simulated enemy squadron was destroyed in five minutes.

He is not afraid he will die. No one has ever died in a battle on the Moon. The struggle on the Moon is a limited, courtly warfare in which men withdraw or surrender when they are outmaneuvered. Someone may die by accident sooner or later, but death is not his major worry.

The screens clear. He taps the halt button and the screens freeze while he studies the landscape. Four will have to move thirty meters to the right and peer around that medium-size crater on his left. Three will have to drop back twenty meters and hold position so it can maintain the commo chain. Two and One

He taps out his orders on the computer keyboard mounted on the left side of his control panel. The computers on the gun buggies verify the orders with the computer in the command vehicle and five green lights flash on the control panel. He presses the start button and the whole squadron creeps forward.

He has been moving through the foothills like this for two Earth days. The whole squadron stops every hundred meters and he plans the next move for all five vehicles.

The four screens blank again. He turns his head and searches the landscape for Three. There was nothing between him and Three when he set the course. Two of the buggies will lose contact in about seventy-five seconds but Three is supposed to stay in contact until he reaches the next halt point.

The screens light up again. Three rises out of the ground. It has slipped into a depression he didn't see. It blanked out before its computer could react to the new situation and raise its antenna.

The other two buggies lose contact right on schedule. Their screens come on again thirty seconds later and he stops at another halt point. He pulls a plastic bottle out of a compartment and rolls two tiny drops of liquid down his tongue.

Warm, pleasant sensations spread through his body. His brain is still functioning but every important muscle in his body is relaxing for forty-five seconds. He is a muscle crammer when he gets tense. Three sips on the bottle during his working day can fight off fatigue better than any energizing drug on the market.

He is only eighteen kilometers from his ultimate destination. If he can keep on moving without stopping to rest, he will be there in about eight hours.

He puts the bottle back in its compartment and studies the screens. Orders go out to the gun buggies. They move forward thirty meters and the screens blank once again.

His hands tighten on the steering wheel. He searches the terrain on his left and sees a thin cloud of dust moving across the area between two small craters. Three

has rolled into another shallow depression before its computer can raise its antenna. The sun is approaching its maximum altitude above the horizon and he is having trouble seeing the smaller variations in the surface.

Three's black and white framework rises out of the depression. Two screens light up on the console. The other two screens are still blank.

The halt order leaps out again. His fingers tap out more orders. Gun Buggy Four rolls away from its position and starts creeping along the bottom of the big, rolling hill directly in front of him.

The two blanked-out screens belong to the two buggies spread out on his right. Gun Buggy One is supposed to send its signals to Two and Two is supposed to relay its signals through Three. Two is the buggy the Europs will probably hit first if they're ambushing him. Knock out Two and One will be isolated. The first shot in the battle will leave him with two working gun buggies in contact with the command vehicle.

His eyes dart across the screens and the landscape outside his windows. Electronic probes leap out from every vehicle. He moves Three closer to the command vehicle and guards his left flank.

Four rolls its front end around a boulder at the bottom of the big hill. Its camera pans across low rises and small, shallow craters.

There is no danger he is going to die. The bottle in the compartment is looming in his mind as if it is as big as Mount Bradley but there is no danger he is going to die. The stakes are high but the Europs know they will be exposed to retaliation if they actually kill someone.

The stakes are high but they are not decisive. One hundred over-populated, technologically advanced nations are jockeying for position in the world economy and bigger gold reserves can give a country a stronger currency and a temporary, marginal advantage over its competitors. You cannot eat gold and you cannot use it to power your machines—but you can use it to back up your currency and make the other guy give you a little more of his goods for a little less of yours.

You don't even have to transport the gold back to Earth. It only costs seven dollars and fifty cents to ship one pound of payload back to Earth, but the gold can be buried in a base on the Moon and be just as useful as gold buried in Fort Knox. Five other major powers, have bases on the Moon and the gold can be transferred from base to base if actual transfers of real metal are deemed necessary. Two of the smaller countries on the Moon have even discovered they can back up their currency with unmined gold and save themselves all the trouble of actually digging the stuff up and turning it into neat, shiny bars.

A red and yellow flare rises above the horizon on his right and arcs across the black sky. Gun Buggy One has been attacked. It kept moving forward after the comms link was cut and it is reacting according to its automatic program. Its sensors have picked up enemy machines and it has verified that the machines are

operating like hostile gun buggies and not automated scouts.

Davino's fingers dance across his console before his emotions can react. Six hundred engagements in the simulator take command of his reflexes. Gun Buggy Four changes course and takes up a position between the hill in front of him and a low crater on his right. Three moves left two hundred meters and trains its camera on the left side of the hill.

They have eliminated two of his gun buggies but they still don't know where he's going. He can still slip by them if he can knock out the other guy's gun buggies when they close in. No country on the Moon has more than a dozen combat groups. They will try to trail him but there is still a good chance he can slip through their net and reach the site.

He will have accomplished something even if he just destroys their equipment and returns to his base. He has lost fifty percent of his equipment but the colonel will still give him a good report if he destroys more of theirs. Two other combat teams are waiting in reserve. Somebody else may slip through their net if he weakens it.

A red alarm light flashes on the control panel. A fuzzy, brownish shape rolls across Three's screen. Three's gun turret swings toward it and it disappears behind a crater before the radar sight can lock on.

Two more flares rise on Davino's right. Gun Buggy One is still evading its assailants and trying to reestablish contact with the command vehicle. Its automatic program is advising him it is definitely being attacked by two enemy gun buggies.

Davino repositions Three's gun. A little pulse of hope slips through the lid he has clamped on his emotions.

He now knows where three of the Europ's gun buggies are located. The Europ's command vehicle and his other gun buggy have to be located somewhere between them.

There is a very good chance, in fact, that one of the Europ's vehicles is hiding behind the hill in front of Davino. There has to be something in that general area if the Europ is still in contact with all his buggies.

The buggies he has located can all be operating on automatic, of course. The Europ could have sent them into action and hidden his fourth buggy somewhere else. But he knows that isn't very likely. All three enemy buggies are engaging in aggressive actions; he knows the two buggies on his right are trying to destroy One and he is pretty certain the buggy he saw on Three's screen was trying to sneak around his left flank. A gun buggy can engage in evasive action on automatic but nobody in his right mind is going to let a buggy attack by itself. Suppose it shoots at a manned command vehicle by mistake?

Davino has always taken big chances when he has worked with the simulators. Sometimes he has won, sometimes he has lost. Aggressive guys do O.K. sometimes, and cautious guys do O.K. sometimes. There are no hard and fast rules—but his six hundred battles in the simulator have taught him one important lesson. When they catch you in an ambush and knock off a big chunk of your fire

power, you may as well be aggressive. You may lose anyway, but you don't stand a chance if you lie still and let them draw the noose around you. Five buggies will close in on him from five different directions as soon as the Europ pulls his troops off One. They may be closing in on him right now.

He taps out another series of orders on the console. Gun Buggy Four starts rolling around the right side of the big hill. Three starts rolling up the slope.

The command vehicle rolls up the hill thirty meters behind the dust and rocks arcing away from Three's back wheels. A shallow, unexpected depression catches Davino by surprise. All four wheels leave the ground in the low gravity and come down with a soft bump that makes the cockpit rock from side to side like a cradle. The gun buggies are traveling at their top combat speed—thirty kilometers per hour—and they are leaving the ground and sailing through space every twenty or thirty meters.

He speeds up the command vehicle and catches up with Three as he approaches the top of the hill. The command vehicle sails over the top of the hill with Three on the left and Four racing around the bottom of the hill one hundred meters below.

He is looking down a long, gentle slope that stretches away from him for several hundred meters before it merges into the rolling lunar landscape. There is a beat-up, heavily cratered boulder-field at the bottom of the slope and there is another big hill on his right, about five hundred meters in front of him.

A red and white vehicle is parked between two small craters on the top of the other hill. It has an armored, bubble-shaped cockpit and there is a big blue cross on the front end.

His eyes sweep across the boulder field. A flash of reflected light grabs his attention. An enemy gun buggy has been stationed inside a jumble of craters and boulders near the front of the field. The boulders are taller than the buggy, but there are big gaps in the jumble and he can see the top of the antenna and part of the framework near the middle of the buggy.

A moving cloud of dust catches his attention on the left. A small four-wheeled vehicle is rolling across the slope toward Three. It is about one meter long and the square, black box on its front end is a warhead containing several pounds of the latest development in high explosives.

A gun buggy crawls around a crater near the bottom of the hill. Its gun turret swings toward Three. Two more wheeled torpedoes drop off the arms on its sides and race up the hill. The gun buggy in the boulder field rolls out of its hiding place and turns its gun toward Three.

Davino's hands leap into action.

Six hundred hours in the simulator have made his responses as automatic as the actions of his gun buggies.

Magnetic latches release the torpedoes mounted on Three. Homing devices lock on their target and send three torpedoes rolling toward the European buggy on the

left.

Three swerves forty-five degrees and turns its gun turret toward the buggy in the boulder field.

Guns flash on the enemy buggies. A silent explosion erupts near Three's back end. A crater spreads across the lunar surface as if someone is blowing into a box of sand.

A light on his control panel tells him Three has fired its main gun. Another cloud of dust and rocks sails into the sky. Another shell slides into the chamber of Three's gun.

Three's machine guns open on the torpedoes closing in on it. The European buggy on the left swerves away from a torpedo and rolls behind a crater. The buggy in the boulder field fires another shot.

Davino's hands have been hopping across the console as if he has been playing two melodies on the piano at the same time. He has been guiding Four through the bumps and craters on the side of the hill at the same time he has been handling Three. Four has been sailing over dips and swerving around craters at top speed and it is now racing toward a point at which it can open fire, on the boulder field.

The Europ has seen Four coming around the hill. The buggy in the boulder field is turning its turret toward Four but the Europ has miscalculated by at least ten seconds. A big, ragged hole blossoms in the front end of the buggy. The front end skids to the left. The wrecked buggy comes to rest with its gun lying across the side of a gray boulder.

Davino turns toward the other enemy buggy. The lights on his control panel tell him two of his torpedoes are still active and are still rolled into a network of craters but he can still see the top of its turret.

Davino twists a dial on the control panel. The command vehicle swings to the right and rolls down the hill with the two gun buggies racing along with it. Electronic fingers leap at the European command vehicle parked on the other hill. Gun turrets swing toward their target.

Trumpets ring in Davino's mind. The Europ could have backed up and disappeared over the hill if he had reacted fast enough, but now it's too late. His sights are locked on the bastard's cockpit and nobody can deny it. The other enemy gun buggy is on the other side of the boulder field and it will be at least thirty seconds before it can work its way through the boulders and train its guns on Davino's vehicle. Surrender or die and nobody dies in this war. You go back to your base with your command vehicle stripped of its weapons or they take you and your vehicles prisoner and exchange you later. But nobody expects you to fight when the enemy has the drop on you. This is the Moon, gentlemen, not some crummy jungle in South America.

He can disarm the Europ and push on to his destination. He can radio LeFarge

and have them send in the reserves while he patrols this area with his two gun buggies and keeps his prisoner incommunicado. It isn't the kind of victory he was hoping for, but LeFarge knows they gave him a rough assignment. LeFarge will give him a good report. Everybody in Washington will know they snapped up the prize because Major Joseph Davino out-maneuvered an ambusher and tore a big hole in the enemy's defense-system.

Movement catches his eye. Two red and white buggies are parked on his right with their guns trained on his cockpit. The two buggies that have been pursuing One have come up in time after all. They have been maneuvering through the craters while he has been fighting the Europ's other buggies and the Europ has brought them into action with seconds to spare.

Davino's fingers rest on the buttons that will send three shells flying toward the Europ's command vehicle. Nobody will ever know if he pushes the buttons and fires on the Europ in cold blood. Nobody has died so far but accidents can happen. One of the shells will probably hit the Europ's command vehicle before the Europ can fire the guns on his two buggies. The Europ may even be getting ready to kill him before he kills the Europ. How long can you fight a war for high stakes before somebody cracks?

The snotty computer jockeys in the Pentagon will never forgive him if he lets that find get away. LeFarge will know it has been one of those things, but LeFarge won't be able to help him. He took this job because he knew he needed a big success and now there's only one way he can get it. Nobody in the Pentagon is going to reward him for making a good try. The orders that will send him back to Earth are already being processed in Washington. Nobody is going to pat him on the head and tell him the Pentagon has a kind heart and everybody knows he and Dr. Cunningham are a wonderful couple and shouldn't be torn apart.

He will never see Annie again.

He will live out his life on a cramped, crowded, smelly, poisonous world where you have to fill in a form to look at a mountain.

The two guns on the enemy buggies turn away from his cockpit at the same time his own guns turn away from the Europ's command vehicle. The gun barrels swing around until every gun is pointing at a spot, on the horizon that is at least one hundred and twenty degrees from the nearest target.

A light flashes on Davino's console. He presses a button and static fills his earphones.

"I will back off two kilometers south," a voice says in his earphones. "Will you back off two kilometers east?"

"I will back off two kilometers east," Davino says.

"Thank you. I think you fought most gallantly. I would have been completely defeated if my two gun buggies hadn't come up faster than I had any right to expect.

"I thought your ambush was very well planned. I didn't know you were anywhere near me until you attacked."

"We only picked you up on the radar once. My commanding officer said you were one of the most skillful drivers he had ever seen. I am Captain Anton Olivini."

"I'm Major Joseph Davino. It's been a pleasure meeting you."

"It's been a pleasure meeting you also, Major. May you have an easy trip home."

"The same to you, Captain Olivini. Good luck."

"Godspeed."

The six vehicles back away from each other with their guns carefully pointed backward. Davino wishes he can feel noble but he soon realizes he can't.