

Pre Dawn II

Spin and Burn

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Space is a lonely place. The distances are so great that everything takes forever to happen. The light from the Sun takes eight minutes to finally reach the Earth, traveling at unimaginable speed. It takes light over one year to reach Earth from the nearest star. In space, things take time. And so the Mars Ranger slowly made its journey from its orbital base on the moon to its destination of Mars, at its closest point nearly fifty-five million kilometers away or just over Thirty-four days. It's crew quietly, efficiently kept time, kept routines in place, learned lessons from past experience and new lessons in patience were constantly being learnt.

Captain Jane Rork smartly finished the last steps of one of her many checklists and put the data pad down to stretch. Peter wasn't joking she thought when he said that this trip was easy money. Easy if you could handle being confined in cramped quarters where night and day blended into each other and the only sounds were those of the dull roar from the engines. She kept herself busy all the time, afraid to be left with her thoughts wandering in the vast emptiness of space, so when she wasn't on deck in the cockpit, she was in the gym, making the most of every moment. From experience she had learned that the worst thing you could do during a space flight was nothing. She was at the mercy of her thoughts then, despite being a positive person with a positive outlook on life, one negative thought could easily snowball into a disaster of depression.

Peter climbed into his chair in the cockpit, smiled and greeted Jane. He looked a little sleepy, probably not long after his down time. He took a casual look at the computer screens.

'All looks OK,' he said. He suppressed a yawn and collected one of the data pads after a quick sip of coffee. The tension between Jane and Peter was all gone after just over a week in transit. By that time team mates either killed each other violently or learned to get along quickly. A rhythm had formed between them. They weren't exactly completing each other's sentences but there was symmetry to their work together. Jane was in her element. Big ship, lots of flight time, and endless space. Her tenacity as a pilot was what earned her wings. She was resilient, she didn't crumble in a crisis, and knew how to live in space.

'All yours, Captain,' she said. 'You have the comm.' Peter settled in for his shift as Jane made her way out. 'I'm going to see if I can out-press John in the gym again,' she said. Peter laughed.

'Take it easy on him.' Peter couldn't help but look at Jane's rear as she crawled out of the narrow doorway. 'Not bad!' he thought privately. 'Still got it!'

Jane made her way down the tight passageway that connected the whole ship together. It was just tall enough for her to stand in reaching one hundred and eighty two centimeters at its highest point. The whole ship was designed for efficiency, nothing wasted, especially space. It didn't take her long to reach her quarters and change. All living areas were close to the bow of the ship so the crew could keep in contact easily. The rest of the ship was filled with precious cargo and made a balance in weight. Jane grabbed some water finally and made her way to the ship's gym, just a little further down where John was waiting for her, already desperately warming up, determined not to lose to Jane again. It had become a friendly contest between them, age versus beauty, it was dubbed by the rest of the crew, and favourites were starting to emerge and bets were trading hands. John had beaten Jane during their first encounter, even though she claimed he had cheated by adjusting the gravs for the room during his lift and then resetting them. As an engineer it wasn't hard for John to do, but he had always jokingly claimed his innocence.

'Look, nothing up my sleeve!' he said. Jane walked in with a nod and a smile.

'Let's get down to business,' she said. Jane ran a warmup on the treadmill, slowly increasing the speed until she felt the constant rush just out of her comfort zone, her heart beating rapidly, breath steady and firm, her legs pounding the belt. When she finally hit the weights, John had already pressed his personal best, without cheating. Jane came up for her turn while John stood over the weights and spotted for her.

The next thing that happened would remain imprinted on Jane's memory for the rest of her life as the worse moment she could remember. First, there was the sound, a loud, sharp, staccato pelting on the hull of the ship. Suddenly, John let go of the weights and fell silently backwards landing on his back on the floor in an increasing pool of warm blood. Jane got up and turned to see John in the increasing puddle. Something did not look right, regardless of the blood, and it didn't take her long to realise that John's legs and waist were no longer connected. Something had cut him in half.

'All crew to stations immediately!' Peter's voice came over the comms strained but firm. 'Meteorite strike,' he said, 'All crew to stations.'

'Christine, you'd better get to the gym,' said Jane over the com link on the wall. 'I'm not sure what you can do, but please have a look at John.' By the time Christine got there, John Collins was long gone, cut in half by one of the meteorite particles, only the size of a grain of sand but lethal at the high speed it was traveling. When Jane got to her position in the cockpit, she was shaken and couldn't concentrate. She tried to calm herself as Peter assessed the damage.

'First time for everything,' Peter said. 'It's my first meteorite shower. Control was supposed to have cleared this area. Just goes to show there are no guarantees in space.' He checked the displays and worked with Oliver to gauge their situation. 'Luke, how are things with you and the ship,' Peter asked over the comm. Luke Hill, the only remaining engineer was working hard to answer that question.

'Peter, I'm checking all systems and will let you know shortly. We are basically still in one piece. The automatic resin sealants in the hull appear to have worked, we are not losing air, but I think so far that there may be some structural damage. I'll get back to you in seven minutes to be sure.'

The strike was over in less than three seconds but now the crew were working frantically to stay alive. There was tension in the air as each member of the team was coming to grips with the situation, realising that the next moments could be their last if the ship didn't hold together. All was so peaceful just moments before but now, by sharp contrast, everyone was on edge.

Christine took one look at John when she got there, and turned away. She gathered her wits and bent down beside him and searched for a pulse where there was none. She just wanted to be sure, sure that there was nothing more she could do.

'Peter, John is gone,' she said and walked away from the comm. Peter froze for

A moment and then returned to the ship's systems, without a moment to think of what had happened to one of his crew.

Luke climbed into the cockpit where Jane and Peter were still checking systems on the ship.

'You're It now, Luke,' Peter said. 'John didn't make it.' Luke sat down heavily and took a short moment to compose. That was all the time they had, as now it was down to business with their lives on the line.

'It's not looking good,' said Luke. 'I've run checks on the ship's integrity on every system and we have taken serious structural damage. We are not losing air but we cannot manoeuvre around Mars. You can forget our slingshot around the planet. If we put the ship through that strain, I guarantee she will break apart!' The Mars Rover used a braking manoeuvre that took it around the planet in its final stages of the journey and allowed the ship to lose most of its speed by using the gravity pull of the planet as they flew close around it. Now, this was not going to happen.

'Well, that's great,' said Peter. 'We're just over half way to Mars with no way to slow down once we get there! We need to think of something, fast.' There was silence for a moment. Christine suddenly climbed into the cockpit, looking pale and tired.

'What's left of John is in the morgue in sick bay.' She looked at all the worried faces. 'What did I miss?' Peter explained their situation to her briefly. 'Great!' She said. 'We still have a little time, so let's get thinking. Every problem has a solution. It may not be pretty, but there must be something we can do.'

'There is something we can do,' said Jane. 'I have an idea, but you are not going to like it.'

'Any idea is better than nothing right now,' said Peter. 'If anybody has an idea, let's hear it now before I turn it over to Mission Control.' Jane's idea was simple and effective but with one major drawback.

'Luke, how are our engines?' She asked.

'Mostly OK. There is minor damage but they are working around eighty-five percent.'

'So, if we initiated a sustained burn, would they hold?'

Luke thought about it for a minute. 'Yes, I believe they would hold but we don't want to accelerate in our current direction, we want to slow down.'

'Well that's the tricky bit. Peter, can we use our navigational thrusters at this speed to rotate the ship around then activate a sustained burn to slow us down?' Peter liked the idea right away.

'I think that could work, Jane!' he said. 'That's a great idea! What part of that don't I like?'

'Well, if it works according to plan, we'll have no fuel left, which means we'll be stuck in orbit around Mars until a rescue ship can pick us up.'

Luke liked the idea regardless. 'We can still deliver our cargo, and then spend that time on planet.' He liked the braking part, but after a moment to think about it, wasn't sure he liked the thought of spending a month on Mars while a ship came to pick them up. A trip to Mars was usually one way and life on the planet was harsh. It was a new colony that still struggled to survive and conditions were rough.

'I don't see many other options at the moment,' said Peter. 'I'm running this past Mission Control and see how they like it. The rest of you, I want reparative checks of every system on this ship until I say otherwise. We are going over her with a fine tooth comb until we know exactly what we have. Is that clear?' All nodded and got to work. 'I'm not losing anyone else on my shift!'

The hours that followed were organised madness as each crew member went to their quarters and went over every bit of the hundred meter Mars Ranger. Luke was instrumental in helping make the calculations that would inform their future decisions revolving around what the ship could do and what it probably shouldn't. The Ranger had built into it an intricate system of electronic gates and sensors that allowed the engineers to assess the status of every component. Right now a series of red lights were flashing on Luke's screen notifying him of component and structural failure. Luke could see that they were lucky this time. A meteorite shower could easily destroy a ship of any size in seconds, but this one had been light, just the distant remains of the main shower, and they had not hit the main force of it, rather just the edge. All these factors meant that the Mars ranger was still flying and would probably make it to Mars.

'Peter, all calculations are complete and I have sent you the results,' said Luke over the comm. his voice sounded strained.

'Thanks, Luke,' replied Peter. 'I've contacted Mission control and will feed your data to them. Everybody just take a little breather till we hear from them, that's an order. I want you all fresh for the next phase of this trip.'

'I'll get us some coffee,' offered Jane. She unstrapped her harness and squeezed out of the cockpit as a million thoughts raced through her head. She realised at that moment she wasn't afraid to die if that was going to happen, but she was shaken by what she saw happen to John, and she hated just not knowing. Space was always a bit of a gamble, but until now, she had liked the odds. Up until now it had always been better than even money, and legends in space flight had been made, but this flight had suddenly turned nasty and the odds were no longer in her favour. She might be the next legend.

Mission Control got back to the crew quickly and approved the manoeuvre. They fed Oliver, the ship's computer with all the data needed and a window was set for the best time to initiate. All crew returned to their positions. Peter and Jane sat at the controls in the cramped cockpit with Luke and Christine behind them. If anything went wrong, the cockpit was designed to be an escape capsule, but there was no where the crew could escape to in this situation. They were in the middle of nowhere, no mans land. The window was approaching quickly and would begin in under three hours. The time went quickly as Peter and Jane went through the final checks with Oliver.

'Ready to initiate burn in one minute,' said Oliver. The computer's voice was calm and reassuring as it counted down. 'All checks completed. Beginning phase one of maneuver Spin and Burn.' The first step seemed simple enough. They would use the navigational thruster to spin the ship around its vertical axis to face one hundred and eighty degrees to the reverse of their current direction. Spinning placed the least amount of stress on the damaged ship and made it easier for the gravs, in place of flipping over to face the other way. The thrusters were gentle as Oliver took control of the ship, and the crew felt only the slightest of pressure as the ship began to turn around. The first step took little more than an hour and went perfectly. Now the Mars Ranger was pointing back to earth with the engines in line with their Mars trajectory. For a casual observer, it would look like the ship was traveling very quickly in reverse. Phase two was a little more tricky and again Oliver would save the day.

'Phase one completed and we are in place,' said Jane.

'Oliver, are we OK for burn?,' said Peter.

'Engines primed and ready for burn,' said Oliver. 'Commencing burn in three...two...one...now.' Nothing seemed to happen at first, but the huge engines were coming to life with perfect timing and

would continue to grow like some huge storm over the next three days, after which they would continue to burn for another three. For a ship as big as the Mars Ranger, nothing happened quickly.

And so, the fuel that was meant for their return journey was slowly and steadily consumed as the huge ship slowed its approach to the awaiting planet of Mars, and gradually came into orbit around the planet a week later. Like an exhausted athlete, its fuel spent, the Ranger rested into a comfortable geosynchronous orbit while the weary crew rested also. The ship had held together and the job of delivering the cargo was a relatively easy one. All on Mars had heard by now of the ship's amazing recovery and when the crew finally descended to the planet, they were greeted with a hero's welcome. They had become legends in the space flight community. Not only had they survived a meteorite shower, the crew of the Mars Ranger had also managed to bring their crippled ship into a safe orbit and deliver their valued cargo!

Luke was securing the final container for delivery to the eagerly awaiting planet. He adjusted the grays on the container and punched in the final sequence to deliver it to the waiting bay below on the planet surface. Christine was escorting the body container holding John into another delivery unit. John would rest here, this his final destination where he received a hero's funeral. Jane and Peter were securing the ship's systems, putting it into hibernation until Mission Control decided what to do with the crippled giant.

'Peter and Jane, you shuttle awaits,' said Luke from the cargo bay.

'We'll be ready in an hour, Luke,' replied Jane. She turned to Peter. 'You look terrible,' she said. 'You really need to sleep more.' Her warm smile turned into a laugh of relief. 'We did it Peter!'

'We did it, Jane. We all did' Jane shared a warm hug with Peter and they just sat there for a moment, a sharp contrast to the constant activity of the last week. Jane turned to Peter.

'Peter, you know what?,' Jane smiled.

'What?'

'Easy money my arse!'