

Hugh Walters

NEARLY NEPTUNE



Leslie Wood

Nearly Neptune

By Hugh Walters

A Chris Godfrey of U.N.E.X.A. Adventure

Book 12 in the Series

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By the Same Author

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Chapter One

Chris Godfrey and his three companions were dead!

The shock of this newsflash hit countless thousands who had been following the adventures of the fearless quartet. Ever since their spaceship had blasted off for the planet Neptune, regular weekly bulletins had kept the world informed of their progress. The sudden announcement that the ship and its crew had been destroyed seemed unbelievable. But the cold official words coming from the Secretary-General of the United Nations finally convinced their multitude of admirers that Chris, Morrey, Serge and Tony would never be seen again.

Briefly, the official statement said that during the previous day all signals from *Neptune I*, as the ship was called, had ceased. Even more serious, the radar tracking stations had reported that *Neptune I* had apparently broken up into a number of small pieces. The disaster seemed to be complete.

Shocked viewers and listeners strained over their sets, anxious for more news. But apart from repeats of the official announcement, nothing was forthcoming. It was some hours later that the radio and television networks began to broadcast accounts of the four astronauts' past adventures.

Most of that worldwide audience knew at least some of the exploits of the world's most experienced space travellers. They remembered how, many years ago it now seemed, these fearless young men had been the first to establish a base on the Moon. Later they had visited a number of planets in our solar system, including Mercury, Venus, Mars, Jupiter and Saturn. Each expedition had been fraught with danger. Many times the lives of the explorers had seemed forfeit, but each time they had survived, thanks to their endurance, skill and matchless courage. Until now! It seemed incredible that they would not return to Earth once more in triumph, and that the dazzling example of the four young astronauts had been

wiped out.

Inevitably the usual controversy broke out and raged universally. Should the lives of the four young men have been risked on this expedition? Hadn't Man proceeded far enough in his exploration of the Universe? What was the value of a journey to Neptune anyway? Though the arguments were flung back and forth, the three people who felt the loss of the astronauts most deeply had no doubts. They knew that Chris and his friends were only happy when they were facing the unknown, when they were trying to push human knowledge into regions where it had never penetrated before.

Sir George Benson, the distinguished scientist, and director of the United Nations Exploration Agency, had been Chris Godfrey's greatest friend. They had met when Chris was still at school, and it was Benson who had recruited the boy to be one of the world's first spacefarers. It was Benson, too, who had been responsible for all the later journeys of Chris and his friends. In his capacity as the world's greatest expert on rocket propulsion, he had planned their many expeditions in minute detail. Now he had failed them. Something, which perhaps he should have foreseen, had happened, and he would never see his four friends again.

Sir George's deputy was Mr. W.H.R.G. Gillanders—Billy to his friends. Next to his chief the tall Australian had been most closely associated with Chris, Morrey, Serge and Tony. Over many years of work together, and through many crises, his affection and admiration for the quartet had grown. Now he was overwhelmed with grief that they had perished somewhere out in the depths of space.

But if Sir George and Billy had developed a friendship for the four because of their professional association, there was one man to whom they had come to mean much in a personal capacity. This was Whiskers Greatrex, the boisterous ex-R.A.F. pilot with the fearsome moustache. He had been recruited as guide, philosopher and friend to the four young men whenever they had been training for another

venture into the unknown. He had helped them through innumerable crises, and he'd known them perhaps better than they'd known themselves. Their loss had smitten him with deep grief, and it was many days before his wife could persuade him to take an interest in life once more.

It was about a fortnight after the disaster that Sir George, Billy and Whiskers were together in the Greatrex home. Mrs. Greatrex had written urgent letters to the other two, begging them to come and see her husband and to try to distract him from his gloom. Though they themselves had little to be cheerful about, Benson and Mr. Gillanders had agreed. They had both cancelled important engagements to spend the weekend with their old friend. Now they were alone together, for Mrs. Greatrex had discreetly left them.

"We all knew it would happen some time," Billy was saying, "and they knew it too. How many times have we tried to dissuade them from making another trip?"

"Every time," answered Sir George. "But they were dedicated to their job. I've often wondered if I should have ordered them to be grounded, but of course I had no excuse."

"No, they were certainly the most brilliant space pilots we had," Billy agreed.

"They were Pathfinders," Whiskers declared, rousing himself momentarily from his gloom. He had used the title given to World War II pilots who blazed the trail for others. Whiskers himself had been on several such missions.

"That's true," agreed Sir George, "and you'll remember, Whiskers, that the Pathfinders had the most dangerous job. It was much easier for those who followed once the trail had been plotted. Our friends have blazed the trail to the planets."

"We all know," Billy interposed, "that each of them would have chosen to end this way rather than in a hospital bed or in a motor accident. They accepted the risks openly and cheerfully. There should be no regrets."

“You’re right, of course,” Whiskers agreed heavily. “But how we shall all miss them! Benny, have you any theories about what happened?”

“The only explanation I can give is that *Neptune I* collided with a wandering asteroid. But as the odds against this are billions of billions to one, I can’t really accept it,” the scientist replied. “Apart from that, I haven’t a clue.”

“How did you know about the disaster?” asked Whiskers, anxious to think about anything but the fact that he’d never see the four well-loved faces again.

“Well, as you know, the ship blasted off from the Cape eleven weeks ago,” Sir George began, and Whiskers nodded, for he’d been at the launching. “The plan was that the crew should keep awake for ten days, then they would all undergo hypothermia for the long voyage.”

As his two friends were talking, Billy Gillanders thought of the wonders of hypothermia. This was a process of freezing the human body so that all life in it ceased. After any given period the body could be restored to its normal temperature and the person revived. He would have no idea how much time had passed, whether hours, weeks or months.

Developed originally for surgical reasons, hypothermia had opened vast possibilities for space-travel. Until some means of travelling faster than light were found, a journey to the nearest star would take many years. Even voyages to some of our own planets took many months, and no conscious astronaut could survive for this length of time. Without being put to sleep by hypothermia no crew could withstand the psychological and physical strains of being confined in a spaceship for so long. Now—to them—voyages only lasted the length of time that they were conscious at the beginning and at the end of an expedition. The long period in between just didn’t exist.

Chris and his crew had all undergone hypothermia during the notable journey to Saturn and Chris had often teased Whiskers about how he’d aged whilst they had been away. As

for themselves, the four young astronauts felt little older than when they had begun their long voyage. Indeed, as all biological processes had been suspended, there had been endless arguments about whether they were physically or legally older. Some interesting possibilities had been put forward.

While Sir George continued his explanation to Whiskers, Mr. Gillanders speculated about the potential of this freezing process. By this means a crew could be frozen and sent on a voyage lasting hundreds of years. At the end they would be de-frosted and it would seem to them that no time had elapsed. However, when they returned to Earth, using the same process, they would find the world very different and many generations of their descendants would have lived and died. Billy gave up trying to work out the results of such a fantastic situation.

“The launch was near perfect,” Sir George was saying to Whiskers. “After going into a parking orbit round the Earth, at a precisely calculated moment the rocket motors were restarted and *Neptune I* began its long journey to the planet. Chris reported that all was well, and further reports came in at regular intervals. The flight path was plotted by our chain of tracking stations all round the Earth. Only minor adjustments were necessary and these were carried out efficiently by the crew.”

“Chris and the others were all right?”

“Perfectly. Of course they were beginning to get bored by the end of the ten days. I had the impression that they were looking forward to their long sleep. We have, of course, a recording of every message they sent. Since the disaster we’ve studied them minutely and there isn’t a single clue that anything was wrong.

“At the pre-arranged time the four of them entered the special compartment designed to operate the hypothermia process automatically. We received a last message from Chris that they were all settled on their couches and waiting for the

freezing to begin. He even joked and said he hoped I hadn't grown a long beard by the time they got back."

"It was my job to monitor the signals from then on," said Billy. "There were two kinds. The first was a continuous signal sent out automatically by one of the transmitters. We used this signal to check the direction, velocity and position of the ship. A second transmitter broadcast data every three hours. This told us temperature, radiation and inter-stellar dust conditions through which the ship was passing. As you know, the transmitters are powered by atomic energy and are one hundred per cent reliable. They broadcast for years if required. There isn't any question of a failure. Besides, it is inconceivable that both transmitters would have developed faults at the same time."

Whiskers was listening gloomily. Most of what Sir George and Billy had told him he knew already. But every scrap of information about his four lost friends was precious. Deep down within him there still burned a little flame of hope that perhaps Sir George had made a mistake, or that there was an explanation for the interrupted signals. Chris and the others had had some incredible escapes. It was hard to accept that Fate had at last overtaken them.

Sir George went on: "Shortly after midnight G.M.T., that is just after half past seven in the morning, local time, our tracking station at Singapore lost the continuous signal. It so happened that one of the lecturers from Singapore University, a Mr. Murat, was on duty at the time. Naturally Murat's first thought was that a fault had developed in his apparatus. In such an event the procedure laid down is that the next tracking station—in this case Perth, Australia—must be alerted and asked to take over.

"This Murat did, but even while he was still speaking to his opposite number at Perth, he was told that the tracking station there was unable to pick up the signal. It would have been too much of a coincidence if both stations had developed faults simultaneously. For a quick check both of them tuned in to one of the satellites and signals were

perfect. The obvious conclusion was that *Neptune I* had stopped transmitting.”

Billy Gillanders took up the story.

“I was having lunch when the news came through, but I never finished it. I rushed to Main Control at the Cape and alerted every tracking and scanning station round the globe. Even then I hoped it was a temporary fault with Neptune’s continuous transmitter, or that the signals might have been interrupted by an uncharted belt of radiation. We shall get the data signal in ninety minutes’ time, I consoled myself, but I had to admit that I was getting alarmed.”

“Did you get the three-hourly signal?” Whiskers asked.

“No. As the time for the reception drew near, we were all very steamed up. We couldn’t believe that the trouble could be anything other than a most unusual fault in *Neptune I*’s transmitter. The radio boys were more pessimistic. They declared that their transmitters were completely reliable and couldn’t develop a fault, but I tried to believe they were exaggerating. We all held our breaths as the moment approached, and I’ll never forget it.

“Well, the moment came and passed—and there was no signal. The data transmitter on the ship was also completely silent. That did it as far as the radio boys were concerned. They had no doubt but that a major disaster had overtaken *Neptune I*.”

“We were still reluctant to assume the worst,” Benson resumed, “so we sent out the radar pulse that we’d developed specially for this long distance tracking. By this time the ship was just over seven hundred million miles away, about a quarter of its journey done. It takes a radar pulse about one hour to travel this distance and the same time to come back. Those two hours were some of the longest in my life.”

“What happened?” Whiskers demanded.

“When the pulse did come back it revealed not one object but several. Instead of sending back a single reflection,

Neptune I was reflecting as a number of separate objects. The inference was plain. The ship had broken up into pieces, each returning its radar pulse,” Sir George answered.

“And you’ve no idea what caused the break-up?”

“None. We don’t know whether the cause was internal or external. We can’t even tell how large are the pieces that are left. At that distance it is just possible to get a reading, but it reveals no details,” Benson said. “So in view of the cessation of both transmitters and the fragmentation of the ship’s radar blip, we can only conclude that *Neptune I* has been destroyed and that Chris, Serge, Tony and Morrey have perished with it.”

There seemed nothing more to say.

Chapter Two

It had been some six months before that Sir George Benson sent for his favourite crew. As Director of the United Nations Exploration Agency, he had just been given the green light for launching a manned probe to the planet Neptune. Of course there was only one crew he would choose for this excursion into regions of the solar system as yet unknown. He knew they would be as excited as schoolboys at the prospect of this new adventure. They would never have forgiven him if he'd passed over them. But now how he wished he had!

Perhaps that was unfair, Benson corrected himself hurriedly. He wouldn't condemn any of his young men and women astronauts to death knowingly. It would have been better not to have requested the Neptune go-ahead. Or at least to have confined it to still more unmanned probes. Still—it's easy to be wise after the event.

Sir George remembered vividly how the four astronauts came clattering into his London office in Theobalds Road. It was barely nine o'clock in the morning, and his secretaries were just getting the covers off their typewriters. He'd sent Chris a telegram the previous afternoon. It had simply said "New venture planned. Are you interested?" As he'd known it would, the answer came from the four pairs of feet hurrying along the corridor towards his office door.

Without waiting for a secretary to announce them, Chris and the others rushed into the inner sanctum.

"Where are we off to this time?" Chris burst out before the scientist could speak.

"Steady on," Sir George smiled. "Aren't you even going to wish me 'Good morning'?"

Chris apologized on behalf of all of them.

“Now all calm down and take a seat,” Sir George said. “I won’t tell you a thing until you’ve settled down.”

Never before had the four young men seated themselves so quickly. They even managed to remain silent during the protracted pause while a secretly amused Sir George kept them waiting. At last he spoke.

“We’ve got permission to make our next shot,” he told them. “UNEXA has passed the budget and given us the go-ahead. We’re to start work at once. Are you interested?”

“Where’s it to?” Tony asked eagerly.

“So you want to know full details before you decide, do you?” Benson smiled. “Well, I can’t blame you.”

“Of course not, Uncle George,” Chris chipped in hurriedly. “Wherever it is, we intend to go, don’t we, chaps?”

The reply left the Director in no doubt about the astronauts’ enthusiasm for their next adventure, no matter where it led them. It was no more than he had expected, for he had known the four too long to have any doubts about their courage.

“This expedition will be to Neptune. Now are you quite sure you want to go?” Sir George asked.

“Neptune!” Morrey exclaimed. “Why Neptune?”

“You mean why have we missed out Uranus? Because at the moment Neptune is more favourably placed,” Benson replied. “It will be several years before we could have another shot at it.”

“Have you roughed out the programme yet?” Chris asked.

“Only in the barest outline,” Sir George replied. “Briefly, you will blast off from the Cape, get into parking orbit, then we shall start you on your way. You’ll switch over to the ion motor a bit later, and then for the next ten days or so you’ll be helping to put the ship on course. After that you can go to sleep until you’re nearly there. You will orbit the planet several times, even descending to take samples of its upper

atmosphere if you wish to. Then you'll break orbit and reverse the drill of your outward journey for your trip back home."

"How long will the expedition last?" Serge wanted to know.

"Just over a year—that is for us earth-bound mortals," the scientist smiled. "To you it will only seem like a month."

"I thought it would be longer," said Tony. "It took us eighteen months to get to Saturn and back."

"Yes, but there have been improvements since then. The ion drive of the spaceship that took you to Saturn had a thrust of only $1/5$ th G, but now the ion drive can produce $3/5$ th G."

"So we shall gain eleven months on you," Tony grinned. "Counting training and other trips, that will make nearly three years."

"Yes. You'll all miss another birthday," Sir George laughed, "but don't worry. We'll keep a record of them for you."

Then they all launched into one of their favourite arguments about how old they actually were. Should their ages stand still whilst they were under hypothermia, or should they be reckoned by Earth time, like other people's? Would their insurances mature according to the date on Earth or would they run on for the extra time that the astronauts had been 'asleep'? What was more important, when would they reach forty, the compulsory retiring age for spacemen?

Sir George remembered how, at last, he'd had to shoo them from his office after giving them strict instructions that they were to report to Farnborough next morning. That had meant that they were to make an immediate start on their training, for the shot was timed for a very few weeks ahead.

Whiskers Greatrex recalled how he'd again been appointed to act as guide, philosopher and friend to the four

young men during the strenuous period of training and briefing. He'd left his country cottage with great glee, for there was nothing that he enjoyed more than playing a part in this exciting exploration of the solar system. He'd been at Farnborough to meet the quartet, along with his old friend Squadron Leader Lambert, the chief medical officer. They had discussed the new expedition as gaily as schoolboys, for though they all knew of the incredible risks the crew would have to run, Chris and his companions had faced such situations countless times before. They were not to know that this time things would be different.

Whiskers groaned as he thought of the exhilarating days of their training. He'd had to keep a constant eye on his proteges, and once or twice he'd had to admonish them for their pranks on more sober members of the training establishment's staff. Rides on the giant centrifuge had been child's play to them, for the number of their previous rides, to say nothing of actual launchings, were legion. Yet training regulations laid down that each of them must spend so much time being whirled around by this vast machine.

They had also to spend periods in hot and cold chambers to test out the insulation of their suits. They had been in low pressure chambers where the atmospheric pressure had been reduced to almost nil. A mock-up of their space capsule had been used to familiarise them with the complicated instruments, though as the cabin was going to be the same as several previous ones, this was scarcely necessary. Finally, they had each had a short spell of hypothermia, just to make sure they remembered all the drill.

They also visited the London Planetarium in Baker Street. There, with the help of the instrument and lectures by prominent astronomers, they learnt a great deal about the planet they were to visit.

Neptune is the solar planet furthest but one from the Sun. Only little Pluto circles on a more distant orbit. Neptune is large, though not as vast as the giant planets Jupiter and Saturn. Its diameter is 27,600 miles, less than a third of

Jupiter's, and slightly over a third of Saturn's. But it is twice as dense as its larger companions.

The distance of Neptune from the Sun averages almost 2,800,000,000 miles, nearly thirty times greater than the Earth's distance. Consequently Neptune receives far less light and heat from the Sun than Earth does. One of the tasks of the expedition would be to confirm the temperature of Neptune's atmosphere, which had been calculated to be about -300° F. Because of its tremendous distance, Neptune moves round the Sun very slowly, taking a hundred and sixty-four of our years to make one complete circuit. Yet the big planet spins on its axis faster than earth, the Neptunian day being just over fifteen and three-quarter hours. So on that cold and distant planet a year would be about 90,000 'days'.

Even Tony was interested in the vital statistics of the place they were about to visit. Because of a hair-raising adventure when exploring Jupiter he was anxious to know the strength of the planet's pull. He remembered how their spaceship had almost been dragged down by the tremendous gravity of the giant. He was told that at the surface Neptune's gravity is about one and a half times that of Earth. Thus a twelve-stone man would find his weight increased to eighteen stone if he tried to walk about the surface of Neptune. For the same reason a spaceship would require far more power to escape from Neptune than it would from Earth.

Serge asked if Neptune had any moons, and the astronomer replied that the planet had two satellites. One of them, called Triton, is considerably larger than our moon. In size Triton is mid-way between Venus and Mars. It may have an atmosphere, and one of the objectives of the expedition was to see if it has.

"How far away from the planet is it?" Morrey asked, and he was told that it is about the same distance from Neptune as the Moon is from Earth.

"Will we be landing on Triton?" Tony asked.

“That I can’t say,” the astronomer replied. “You must ask Sir George Benson. If you do, you’ll certainly find gravity stronger than on the Moon, though still only a third of what we experience here.”

“Triton must look a fine object blazing away in the Neptunian sky,” Serge observed, but the astronomer hastened to correct him.

“Though it’s certainly much larger than the Moon,” he said, “remember that it’s vastly further away from the source of light, the Sun. So I expect it will only shine very faintly compared with our satellite.”

“What about the other moon?” Chris asked.

“Ah, now Nereid is very much smaller than Triton, and much further away from Neptune—three and a half million miles, in fact. I don’t suppose you’ll see much of it.”

The four astronauts had spent many hours learning all they could about the distant, frozen world they were soon to visit. They had peered at it through large telescopes, but because of its immense distance they could learn little from its mysterious image. Faint markings could be seen, but it was not known whether these were surface features or vast clouds in the planet’s upper atmosphere.

“We’ll soon find out,” Tony declared.

The date for the launching was drawing nearer, and Chris and his friends, with Whiskers and Sir George, flew to Cape Kennedy. All of them were familiar with the vast spaceport on the coast of Florida. It was from here that they had blasted off on most of their memorable adventures. No wonder they were tingling with excitement when the jet landed at the airport a few miles away.

Mr. Gillanders drove them from the plane to the spaceport. It was thrilling, as they drew nearer, to see the huge spaceships on their launching pads ready to take off to the Moon, to Mars, to Venus, or to some other world. To each of these the four young men had blazed a trail. They had

been the first to land on Earth's satellite, close to the spot where Lunar City now stood. Perhaps—who knows—others would follow them on this their most distant excursion yet.

They quickly settled in at the Cape, happily renewing their acquaintance with many of the scientists and technicians who had assisted with their previous launchings. Within a few hours of their arrival, they were shown the great ship which was to carry them to the boundaries of the solar system.

Neptune I could hardly be seen standing on its launching pad, for it was enveloped by a massive steel gantry that enabled the engineers to prepare it for the voyage. There were several electric lifts in the gantry, and the astronauts used one of them to ascend to the cabin platform. Eagerly they climbed inside to the compartment in which they were to work, live and sleep during their journey to the planet.

They were familiar with the masses of instruments and controls round the sides of the cabin. Tony, followed by the others, wandered round looking at them. Then they climbed a metal ladder to an upper compartment. This was where they would spend the long months under hypothermia.

Four contour couches were the main features of the place. But unlike the couches for ordinary sleep in the cabin below, these were all metal. It was on to these gleaming beds, each shaped to fit its particular occupant, that the astronauts would climb after their immediate tasks were done. Covers would descend from the roof, and each would be sealed off while the temperature was reduced. Not until the correct time would the covers be lifted and the temperature raised. A complicated, but robust, piece of equipment would be responsible for the automatic sequence of events.

Chris admired the speed and thoroughness with which preparations were being completed. Like his companions he didn't relish a long delay at the last moment. Nothing was more trying to the nerves than a halt in the count-down once it had begun. By carefully checking each job the engineers

were trying to ensure that no final hold-ups occurred.

These were happy and exciting days. The astronauts were bubbling over with the joy of life—looking forward to the challenge that lay ahead. And as the date of the launching drew nearer, the whole Cape became infected with the joyous excitement of the four young men.

On the morning of the blast-off, they all ate a hearty breakfast, for their food would be very different on the journey. A truck called to pick them up for a final medical examination, and then they were taken to the preparation room. Here Mr. Gillanders insisted that they should put on their space-suits. As soon as the ship was in orbit they could discard the suits, but regulations compelled them to be worn during the launch.

At last, to a chorus of cheerful good wishes from everyone around, Chris, Morrey, Tony and Serge clambered aboard the van that would take them out to the launching pad. On the gantry Sir George Benson met them and saw them installed in the cabin. He gave each of them a warm clasp of the hand in a silent farewell. Had he even suspected what was to happen, he'd have cancelled the undertaking even at that late stage. But he didn't, and the hatches were sealed ready for the firing. The gantry was moved away and the last seconds ticked on.

Chris and his crew rested confidently on their couches, waiting for the terrific thrust that would start them on their way.

Chapter Three

“Here goes!” Tony called.

Gently at first; then increasing rapidly, the thrust built up. The astronauts felt their bodies pressed down into the carefully moulded couches. It was an experience which they had been through hundreds of times before, either on space trips or as passengers in one of the giant centrifuges. Yet they were always relieved when the ordeal was over. It was during these first critical minutes that there was the greatest danger of something going wrong with the ship. *Neptune I* carried hundreds of tons of highly explosive propellants, and a dangerous atomic motor, so that any disaster would have been of unimaginable magnitude. No wonder, then, that the astronauts breathed sighs of relief when they felt the thrust die away—indicating that the ship had gone into its parking orbit some 250 miles above the Earth.

“First stage over,” Tony called gaily as he released his straps.

He propelled himself across the cabin with a gentle push, for they were now in a condition of zero gravity, or free fall. Even experienced astronauts, such as the present crew, took a few moments to get used to the exhilarating state of weightlessness. Tony usually found this period of adjustment an opportunity for considerable hilarity. Morrey joined him and the pair of them went into the contortions of a fantastic floating ballet.

“Come on, you two,” Chris grinned, “there’s work to do.”

Reluctantly the “dancers” desisted, and they all removed their suits and helmets. Chris couldn’t help reflecting how much more comfortable space journeys were now. In the early days astronauts were compelled to remain suited for the whole of the voyage. Now they need only don the somewhat clumsy space-suits when about to take off or land.

Or, of course, for excursions outside the ship on some of the strange worlds they had visited.

What would Neptune really be like, Chris wondered. Intensely cold, of course. Swirling with a poisonous atmosphere, perhaps rent with violent electrical storms. Would there be a surface to land upon? And if so would they be able to penetrate deep enough to touch down?

With a jerk he recalled himself and his companions to their present tasks. First they must report to Control that all was well, and that the take-off had been uneventful. Then they would have to carry out a long series of observations to enable the scientists on Earth to plot their exact orbit. Of course, terrestrial observers could estimate this fairly accurately from their own observations, but for the degree of exactitude required it was essential for the crew to cooperate. They would also be taking routine readings of radiations at many different wavelengths, paying special attention to solar radiation, which could be quite dangerous.

Each went about his own special task happily, with Chris reporting frequently to Control. Sir George Benson's voice came through several times on the radio, and told them that he was satisfied with events so far. At last the huge computer at the Cape had digested sufficient information to plot an exact course, and now the crew were waiting to be told when they must break orbit and leave the Earth altogether.

It was Mr. Gillanders' voice that gave them their final instructions.

"Chemical rocket motor will be ignited, thrust force three duration fifty-eight seconds, in two minutes, thirty seconds from—now!"

Alongside the spaceship's chronometer was the countdown instrument. This recorded the number of minutes and seconds left before zero, and Chris quickly set it going in accordance with the instructions he'd received. All four astronauts retired to their couches, but there was no need to suit up or attach their safety straps. They watched

the ever-changing figures of the count-down, while Chris fingered the switch at his side that would awaken the giant rocket motor to life. He'd set the dial to force three. Now it only wanted the pressure of his thumb to start them on the journey to Neptune.

Ten seconds, nine, eight! The four young men wondered silently what the expedition would be like.

Three! Two! One! Zero!

As the line of noughts clicked into place across the dial Chris pressed. Though he knew it didn't need much force, he found himself pressing until it hurt his thumb. The motor burst into life and the crew felt the steady pressure beneath them. Chris kept his eyes on the fleeting figures of the second counter. Already twenty-five seconds had slipped by since he'd pressed the switch.

By common consent all four remained quiet, allowing Chris to concentrate on the vital task. A fraction of a second too soon or too late would make quite a difference to the direction of their flight path. Though an error could be corrected later, it was a point of professional pride to get on target first time. Failure to do this usually resulted in some good-humoured sarcasm from Control.

Chris's thumb trembled on the switch, a second pressure of which would stop the motor instantly.

Fifty-seven! Fifty-eight! Press!

Was he just a fraction of a second late? Chris wondered this as, weightless again, he suddenly floated up from his couch. Travelling at nearly sixty thousand miles an hour it was easy to calculate the difference that even a fifth of a second would make. And the error would increase every moment that the ship followed its faulty flight path. It would be some minutes before Control would come through to say how successful he'd been.

To cover up a slight anxiety—which he was reluctant to admit even to himself—Chris gave a few brisk orders to his

companions. Serge and Morrey were to begin preparations for switching on the ion drive of the atomic motor. Tony had the fuel supply and numerous gauges to check. As his companions floated about on their jobs he drummed his fingers impatiently on the casing of some intricate mechanism. He was not to know what this simple action would cost later on.

“Not too bad. Only one minute, ten seconds out,” the voice of Billy Gillanders boomed over the radio. It took Chris only a moment to realize that Sir George’s deputy was referring to a slight error in direction rather than a colossal mistake in time. Not bad? It was jolly good, he told himself with satisfaction. Any error of less than five minutes—that is one-twelfth of a degree—was quite an achievement.

He called out the good news to his companions, and for a moment Tony wondered what it all meant. Ah! yes. A circle is divided into three hundred and sixty degrees, he remembered. On the Earth’s surface a degree is about sixty-nine miles. Degrees can be divided into sixty minutes. Down on the ground a second is about three hundred yards. Strictly speaking one should refer to minutes or seconds “of arc” when speaking of fractions of a circle. This avoids confusion with units of time, Tony told himself. But Mr. Gillanders knew that Chris would understand what he meant.

It certainly wasn’t a bad effort. *Neptune I* would be able to speed through space for two days before a further refinement in course would be necessary. Meanwhile the crew must prepare to switch over to the atomic motor.

The atomic motor had been another great help in space travel. Before its development ships had had to rely on heavy and bulky fuels. Though many powerful chemicals had been discovered, they still limited the payload and range of vessels depending on chemical rocket motors. With the help of the ion drive of atomic motors, fantastic velocities could be achieved. But this new form of propulsion had disadvantages as well as advantages, and as Serge went about his duties he wondered if any further means of space travel would ever be

discovered.

He believed that the weakness of the thrust of an ion drive was far outweighed by the ability to run almost indefinitely. Though an atomic motor could never lift a ship from the ground, once escape velocity had been reached its steady push could continue to accelerate the vehicle until almost two-thirds of the speed of light had been achieved. Not that they would travel that fast, Serge knew. But perhaps it would be necessary when man came to venture beyond the solar system.

There were several hours' work in getting ready for the switch-over. Tony, as the expedition's mechanic, was in charge of the operation, and his instructions about shielding, fuel rods, and the liquid caesium bottles were clear and precise. At last the job was done and Chris reported this to the Cape. A careful time check was made, and the signal was given. Tony pulled the lever that lowered the last fuel rod into position and so made the motor critical.

At once the feeling of weightlessness vanished. Each of the astronauts again had a sense of "up and down". Previously under zero gravity, this hadn't existed. Only because they were familiar with the lay-out of the cabin had the astronauts any idea which way they were moving. Now there was no doubt which was their floor. The gentle thrust that was nudging the ship along at an ever-increasing velocity provided a low gravity. It was about one-sixth of terrestrial gravity, or approximately the same as that on the Moon.

The astronauts had spent long periods on Earth's satellite and so were quite used to working under such conditions. In many ways the low gravity was preferable to weightlessness, for now articles could be left loose in the cabin. They wouldn't float about disconcertingly any more. Eating and drinking, too, were simpler, for they needn't squeezed tubes as they would on a long weightless journey.

Chris reported to Control that the atomic motor was functioning normally and that he could detect no undue

amount of radiation in the cabin. A few seconds later Control requested that regular readings should be made on the geiger counters, for it would be during the first few hours that the shielding of the cabin would receive the most severe test. If the radiation from the motor showed no increase during that time, then they could settle down to their long voyage without any anxiety.

The time lag in sending messages and getting a reply was becoming noticeable. As the ship drew further away from the Earth this would increase. Even though radio waves, like light, travel at 186,000 miles per second, the ship was now so far along its path that it took two seconds for a signal to reach the Cape. And, of course, another two seconds were lost as the reply sped back. A feeling of isolation would increase in proportion to the time lag. The crew remembered how lonely they had felt when, on some of their more distant journeys, it had taken several hours to consult Control.

With their immediate tasks completed, Chris and his companions could settle into the routine they would follow until the time came for them to transfer to the "fridge" ready for their long sleep.

Of course, there were exercises to do. An important part of an astronaut's routine is to carry out a number of well-planned exercises designed to keep all his muscles toned up. Under conditions of low or zero gravity, the crew of a spaceship soon found that they were losing strength. Because their muscles had little or no work to do, they rapidly became flabby. This was not important so long as they remained weightless or almost so. But it became very serious when they returned to normal conditions. Without these exercises an astronaut, returning from a long space voyage, would be completely helpless under conditions of terrestrial gravity. He would have no more strength than a baby, and he would experience the utmost difficulty even in breathing.

Chris and the others understood the importance of carrying out these exercises, which were useful also because they gave the crew something to do. On a long space-trip one

of the greatest enemies is boredom, for there are few exciting moments and little work except routine observations. The exercises were a welcome part of their work and were planned very ingeniously.

“Can we all turn in now, Chris?” Morrey asked after they had completed their physical jerks and had had a good rub down.

“Yes, I think so,” Chris agreed.

There was little point in leaving one of their number on watch, for the only hazard they would be likely to encounter would be from a stray meteorite. Impacts with very small ones caused no trouble, for a penetration of the outer skin could be sealed up automatically. Only when they were a half-inch in diameter, or larger, would meteorites cause real trouble. Then they would penetrate to the cabin or fuel tanks. But this was so unlikely that the possibility could be forgotten.

The four young men snuggled down into their contour couches, for it was more than eighteen hours since they had blasted off from the Cape, and nearly twenty-four hours since they had left their beds on Earth.

Chris told Control that they were all going off duty, and promised to report as soon as the new “day” started. Control gave the O.K., for the crew could always be aroused by a buzzer set off from Earth. Morrey dimmed the lights in the cabin.

“I’m going to have a look outside before I go to sleep,” he said, getting up from his couch.

While the others lay back quietly Morrey went across to the observation panel and pressed the switch that would cause that part of the outer casing to slide back. Through the thick glass panel in front of him he peered out into the void. The Sun was shining on the other side of the ship, otherwise he would have been blinded by its glare. On Earth we are protected by a thick layer of atmosphere which, however clear, still filters out a great deal of the Sun’s radiation. In

space the full solar blast was falling on the ship. It would not be until they were almost at the end of their journey that the astronauts would be able to observe the Sun directly.

Though he'd seen it many times before, the vision of space never failed to make Morrey catch his breath. Innumerable points of brilliant light shone unwinkingly from every direction. He knew that the void itself, not having the power to reflect light, would be like black velvet, but there were so many stars that he scarcely saw a black patch at all.

The largest object he could see was, of course, the Earth. This, a pearly green, was about as large as an orange, and he could also see the slim crescent of the Moon. Blazing away from another direction was the ruddy planet of Mars, while the lordly Jupiter, some of his attendant moons just visible, dominated another part of the field of view.

The others were all fast asleep when Morrey, with a sigh, closed the outer casing and tore himself away from the panel. Space is indescribably lovely, Morrey thought to himself as he closed his eyes, but it is also ruthlessly cruel.

Chapter Four

As usual, Chris was the first to awake. He swung off his couch and promptly bumped himself against the cabin wall. It takes a few minutes to become accustomed to low gravity again after sleep. A quick tour of the principal instruments showed him that all was well. The ship was hurtling along at over one hundred and fifty-five thousand miles an hour, though this speed was but a fraction of the tremendous velocity that would be built up over the next few weeks. The atomic motor was pressing *Neptune I* forward at a speed increasing by twelve thousand miles per hour for each hour that passed.

When he'd completed his preliminary inspection, Chris called up the Cape. There was now a delay of eighteen seconds between message and answer. This wasn't too bad just yet, but later on it would mean that several messages would be on their way to Control before the answer to the first had been received. It became uncanny, when speaking over the radio, to hear the voice answering messages that had been sent some time before. Back-chat and repartee became impossible under such conditions.

"Wakee! wakee!" Chris called, easily flicking his sleeping crew from their couches. The usual moans and protests were short-lived, for they were all eager to begin the new "day". Tony disappeared down a hatch in the floor to crawl about the fuel tanks and reactor. Serge, with the aid of the ship's small computer, was calculating their position. Morrey was removing and replacing paper rolls from several of the recording instruments, while Chris prepared a detailed report for early transmission. To the astronauts all seemed to be going well. It was impossible for them to know about a fault that was beginning to develop in that vital piece of apparatus.

The hours slid past. In turn they gazed through the

transparent panel at the wonders outside. Earth had now become no larger than a star, but they recognized it still from its place in the pattern of the heavens. It was Serge who was most familiar with the design of the stars. Though all four knew the names and positions of many of them, the Russian had made it a special study. Perhaps it was fortunate, then, that Serge was looking out with rapt attention when he noticed something strange.

“Come here, Chris,” he called. “What do you make of that?”

“Of what?” Chris asked, joining his companion.

“That star in the Andromeda constellation, the one slightly below the nebula,” Serge replied with—for him—considerable excitement.

“What of it?” Chris asked. He couldn’t see anything peculiar about the object of his friend’s interest.

“It shouldn’t be there,” the Russian declared firmly, and at this Tony and Morrey joined them.

“I believe you’re right,” Chris conceded. “Get the map, Tony.”

The star map was produced and studied. Sure enough, there was nothing in the position of Serge’s discovery except, perhaps, a very faint star. Yet this was blazing away brilliantly, quite as brightly as any other in the constellation.

“I thought the star pattern never changed,” Tony observed. “Where’s this one come from?”

“No need to get alarmed,” Serge smiled. “My guess is that it’s a nova.”

“What’s that?” Tony asked, then answered his own question. “Oh, I remember. It’s an exploding star, isn’t it?”

“Roughly—yes,” agreed Serge. “For some reason stars occasionally undergo a great change, growing much larger and becoming very brilliant. This may last for hours or days, and then the star fades again to its normal condition.”

“I’ve never seen one before,” Morrey said at the end of his spell at the window.

“No, they don’t occur very often,” Serge agreed. “At the most one or two a year are seen. They usually cause some excitement among astronomers. I wonder if they’ve spotted this one yet?”

“Get on the radio and report it. They may name it after you,” Chris smiled.

“No, thank you,” Serge laughed back. “Morrey can have it if he wants to.”

However, Serge did hurry to the radio and described his discovery to Control. He gave its position as accurately as he could, and suggested that the information be passed on to the observatories at Mount Palomar and Hurstmonceaux.

“Will do,” the voice came back half a minute later. “We’ll let you know what they say.”

The crew speculated about the nova as they went about their duties.

“What would happen if the Sun did the same thing?” Tony wanted to know. “We should find it pretty hot on Earth, shouldn’t we?”

“Earth and all the planets in the solar system would probably be vaporised,” Morrey told him cheerfully. “But don’t worry. It doesn’t happen very often.”

An hour later Control came through to say that no one else had reported the nova, but both Hurstmonceaux and Mount Palomar were going to look for it at once.

“Anything else interesting going on out there?” the voice over the radio concluded.

“No, everything’s as dull as ditchwater,” Morrey replied brightly. It was a slight understatement.

Only one more incident occurred during the second day of the voyage. A number of blips appeared on their radar

screen. For a moment Chris and the others studied the instrument anxiously.

“A meteor shower,” Serge announced with conviction, “and quite a distance away.”

“That’s a relief,” breathed Tony. “We don’t want to try conclusions with one of those.”

All four retired to their couches after more than sixteen hours on duty. Tomorrow they would have to alter the ship’s course.

The buzzer in the cabin was sounding.

“Come on, wake up,” a voice from the loudspeaker was saying. They recognized the voice of Whiskers.

“We are awake,” Tony called back irritably over the radio. “Cut off the buzzer, will you, you fungus-faced monstrosity.”

“Control calling *Neptune I*. Are you awake?” Whiskers asked cheerfully. “Report at once.”

“I’ve told you we’re awake,” Tony shouted back. “Can’t you hear?”

“Control calling *Neptune I*. Wake up, all of you. It’s a lovely rainy day down here,” Whiskers persisted.

Tony was about to send a blistering reply when he realized that because of their distance his acknowledgment was only just reaching Earth.

“Sorry,” he mumbled into the radio, “I forgot.”

It was almost another minute before the indignant Whiskers replied.

“You be more respectful to your elders, young Tony, or I’ll give you a hiding when you come back,” he declared wrathfully. A few minutes later the voice of Sir George Benson took over.

“There is a slight correction to be made to your course,” the Director said after greeting the astronauts. “We shall not want you to do this for another two hours. I suggest you have

breakfast and exercises while we make the final calculations. I trust that the lateral rockets are all right?”

“Perfectly all right when they were last inspected. We’ll give them another check over at once. Do you want an external inspection?” Chris asked.

They waited patiently for the reply to come back. Here it was.

“Not unless you think it’s necessary from your inside check,” Sir George answered. “Pay particular attention to numbers three and four. Those are the laterals we shall be using. Better look at nine and ten as well in case you overcorrect.”

“Will do,” Chris called into the microphone. “Over and out.”

Tony and Serge made a careful inspection of all twelve lateral rockets and the timing devices which would regulate accurately the duration of the firing. All seemed to be in order.

“Shall I have a look outside?” Tony asked Chris.

The leader paused for a moment. There was still over an hour to go before the change of course would be made—plenty of time to let Tony have a look at the ring of nozzles round the outside of the craft. It would perhaps be as well to make quite sure that none had been damaged by micrometeorites, though the instruments hadn’t recorded any impacts in these areas.

“All right, but don’t stay too long,” he answered.

“Of course I won’t,” Tony replied with an air of injured innocence. Yet they all knew that several times in the past he had been reluctant to obey orders to end his exhilarating space walk.

“Don’t worry. I’ll go out and haul him back by the scruff of the neck if he doesn’t return pronto,” grinned Morrey.

“Come on. What are we waiting for?” Tony asked happily.

“Help me get suited-up.”

Serge and Morrey helped him to don his space-suit and helmet. His oxygen supply and radio were tested while Chris shut off the atomic motor. This was essential, for Tony would have been left behind if the ship had still been under thrust. As it was he would float alongside it, making his way about by short bursts from compressed air jets. It would also have been dangerous for anyone to be outside the ship while the atomic motor was operating. Suits were not designed to protect wearers from the considerable radiation it emitted.

“Ready?” asked Morrey over the radio.

Tony could be seen to nod his head inside the helmet.

“Yes, I’m ready,” the radio called back. “Will you see me through the airlock?”

Tony was now wearing boots with strongly magnetic soles. Whilst the others could skim about the ship without weight, he had to clump along as if he was under gravity. The boots held him to the metal floor of the cabin just as they would help him to clamber about the ship’s outer casing when he was outside.

The airlock was a small semi-circular bulge running from floor to ceiling and having a radius of two feet. A heavily-clamped door led into it from the cabin. Tony stepped through as soon as Serge had swung it open. Just before the door was closed after him Chris took the microphone.

“Come in as soon as I give you a call. Report if you find anything so that I can pass it on to Control. We’ll have to tell them pretty quickly if it’s likely to affect the programme. Understood?” he asked.

They could see Tony grinning as he gave the thumbs up sign.

“Don’t worry about me, Chris. I’ll come in like a lamb as soon as you call,” he promised.

Morrey swung the door to and twisted the clamps tightly.

A few seconds later a red light winked over the door. This was a signal that Tony was ready for the outer door to be opened. Serge pulled a switch and the lights went out. The outer door was open and Tony was free to step out into boundless space.

As the limitless void opened before him, Tony drew in a deep breath. Though he'd moved about in it scores of times before, it always gave him a thrill to step out into emptiness. So much so that he almost forgot to attach his safety line as required by regulations. Sometimes Tony was very tempted to leave the line alone so that he could be completely unfettered in space. But he knew what a serious offence this would be, so he clipped the end of his line to a loop in the ship's wall and stepped outside.

The momentum of his stride carried Tony away from *Neptune I*. Because the airlock had been on the side nearest the Sun, he could see the whole length of the ship illuminated as he floated gently away. There was no sensation of motion. Both he and the ship seemed poised and still except for Tony's slow drift from the airlock. All round, separated from him by only his helmet and suit, lay the dark spangle of space. The distant glittering suns—perhaps each the creator of life—shone steadily from their far-off realms. Though Tony was no poet, the utter grandeur of the scene silenced him effectively.

A slight jerk, as he stretched the lifeline to its fullest extent, awoke him from his rapture.

“Are you all right?” the voice of Chris was asking urgently over the radio.

“Sorry, Chris. I was admiring the scenery,” Tony called back penitently.

“I should think so,” his leader grumbled. “I've called you half a dozen times while you've been day-dreaming. You've got a job to do. Remember?”

“At once. It's as good as done,” Tony declared as he released a tiny burst from his jet gun. Like a piece of

thistledown he floated back to the ship and promptly attached himself to the hull with his magnetic boots. It took quite an effort of will to refrain from turning his gaze back to the entrancing scene around him and to concentrate on the task in hand.

The nozzles of the lateral rockets were in a ring round the hull about two yards below the airlock. Each was two and a half inches in diameter. Strange that from these small apertures could come sufficient thrust to nudge the giant spaceship on to a new course. Tony examined each one carefully. Apart from a slight scouring from interspatial dust, each of the twelve nozzles seemed in perfect order. He reported this over the radio to Chris, who immediately sent a message on its way to Control.

Tony, with some reluctance, pulled at the safety line until he was back at the airlock. As he climbed inside he couldn't help thinking how marvellous it would be to float about in space for hours and hours. How could he know what the future had in store!

“Good job you didn't do too much space dreaming,” Morrey observed as he helped to remove the mechanic's helmet. “We haven't too much time left.”

Tony had hardly finished removing and stowing away his equipment before their instructions came from the Cape. They were to fire number three for 3.8 seconds, and number four for 1.2 seconds. That should be sufficient to make the requisite correction to their flight path. The manoeuvre was to be made in twelve minutes' time. After that the atomic motor was to be restarted and if all went well that would be all the crew would have to do until they retired to the “fridge”.

“I could have stayed outside another few minutes,” Tony grumbled, but Chris only gave him a playful push towards the timing devices.

All went well with the operation. The lateral rockets fired perfectly and the timing was accurate. No further correction

was necessary, so the crew were able to congratulate themselves on doing a good job. The atomic motor was restarted and *Neptune I* resumed its constantly accelerating flight to the distant planet.

“I think we might have a small celebration,” Chris declared. “Get out one of the special food packs, Tony.”

Tony jumped to obey. After the slightly monotonous everyday fare, the opening of one of the special packs was quite an occasion. Tony slid four foil-wrapped trays into the infra-red heater to heat up the contents.

“Lunch is served,” he called gaily a few minutes later.

“Lunch? I make it five o’clock in the afternoon,” Serge pointed out.

“Who cares?” laughed Tony. “Come and get it.”

It was a jolly meal. Everything seemed to be going so well. Not a single problem on the flight so far. It seemed too good to last. It was.

Chapter Five

Disaster for the crew was already on its way. While waiting to hear from Control whether they had broken orbit correctly, Chris had drummed his fingers impatiently on the hypothermia control. This intricate mechanism, housed in a steel case alongside the cabin wall, controlled the operation and timing of the complete hypothermia process. It was responsible for setting in motion the freezing of the astronauts, for maintaining this state over a long period, and for de-frosting and bringing them back to life after a predetermined time.

Whilst the hypo control was completely automatic, it could act on instructions received from the Cape if necessary. This was a built-in safeguard to reduce the risk to the crew. If something happened, Control could send a signal to the automatic apparatus which would then restore the crew to consciousness from their state of suspended animation. This procedure was to be used only in an extreme emergency, for it could seriously disturb the scheduled flight programme.

For some unaccountable reason there was a loose connection among the hundreds of wires that were housed within the hypo control casing. This was in spite of rigorous checks before the flight began. Human error in construction had been almost eliminated. But whether the fault arose from bad workmanship or whether it had been caused by the stresses of the launching, would never be known. Chris's impatient tattoo caused the final break. The results were going to be out of all proportion to the size of that tiny piece of loose wire.

Now the crew settled down to what was, to them, dull routine. Every three hours they had to report to Control and transmit the data they had collected. The atomic motor was forcing them steadily along and the communication time lag was increasing with every message they sent. Chris and his

three companions took it in turns to rest. At times they were all on duty together, and although their exercises and activities had been programmed to reduce boredom as much as possible, time seemed to be passing very slowly.

It was during these periods of minimum activity that the mental stamina of astronauts received its most severe test. Some crews had been known to crack up during long periods of idleness in close confinement. Even Chris and his companions, veterans of many adventures together, became easily irritated, and it was only by constantly checking themselves that real friction didn't develop. They would all be relieved when the time came to climb into the upper compartment and to slip into oblivion.

At last, almost ten days after they had blasted off from Earth, their vigil was over. Though they were now shooting through space at the incredible velocity of about one and a half million miles an hour, they still seemed to be hanging, motionless, in black space. Their distance from Earth was over one hundred and fifty million miles. Signals now took thirteen minutes to travel each way. Chris sent his final message to Control and half an hour later the acknowledgment came back. It was Sir George Benson wishing them good luck and Godspeed.

A final look round the cabin seemed to indicate that all was in order, and Chris gave the command to switch everything on to automatic. One by one they climbed up the metal ladder into the "fridge". The last to enter, Morrey, closed a hatch behind them, and with cheerful words to each other, they climbed on to their couches.

Unlike the couches in the cabin below, these were of steel.

Before they settled in to them, each of the astronauts gave himself an injection of a special fluid that would keep the blood from freezing solid while they were under hypothermia. Then Chris pressed a switch that activated the automatic apparatus in the cabin below, and they all lay back silently to await results.

In a few seconds—or so it would seem—they would wake up and have no recollection of the long period of unconsciousness. When they had had their first experience of hypothermia they had refused to believe that they'd lost consciousness at all. They had insisted that they were still waiting for the process to begin. Only after seeing irrefutable evidence had they accepted the lapse of time. Subsequent experiences had been the same, so now they lay confidently expecting to find themselves approaching the great planet almost at once. The long intervening weeks would be as if they had never existed.

By now there had been a distinct drop in the temperature, and the waiting astronauts gave a slight shiver. An observer would have seen them lose colour and their respirations slow down. Then all signs of life disappeared and only a very slight heart pulse, maintained by a tiny instrument embedded in their forearms, distinguished them from corpses. The hypothermia was complete.

Less than two hours after the crew had sealed themselves in the “fridge” and had started their long sleep, a very faint wisp of smoke rose from the automatic control apparatus. It was so slight that it is doubtful whether, even had they still been in the cabin, the crew would have detected it. Yet it was the first sign of the fault that was to prove so costly.

Neptune I ploughed steadily on. Its radio signals were going out regularly, and the Cape was very happy about its performance. The atomic motor had now been switched off by a signal from Control, and would not be re-started for many weeks. When, eventually, the radio command was received, the motor would start up once more. But this time the gentle thrust would be diverted to the opposite direction. This time the ion drive would be slowly decelerating the ship in preparation for the approach to its goal.

Chris lay wondering what it would be like to take a close look at the giant planet. As he waited for the hypothermia to begin, he told himself that, in what would seem but a few moments more, he would know the answer. But for the slight

chill that he felt he couldn't tell whether or not the freezing was over. If he suddenly felt that the "fridge" was no longer cold, he would know that they had arrived. From past experience he knew that he would be unaware of the moment he lost consciousness or of when he regained it. No matter how long the period in between, the two moments would merge and seem as one.

The cabin was suddenly filled with dense smoke and Chris began coughing violently. Seconds later he could hear his three companions doing the same. Where had the smoke come from? Why had it appeared so suddenly? What had happened?

As, choking, he struggled up from his couch, the answers struck Chris in a blinding flash. The smoke had seemed to appear suddenly because they had just awakened from hypothermia. The ship was on fire and the smoke had come from that!

Never in all their long experience had they met such a situation. Not once had fire broken out during their many voyages, though they had known it was possible. Every precaution is taken in building spaceships, but the unexpected can still happen. Their training had anticipated the possibility, though they had sometimes thought that fire drill was a waste of time. Tony, particularly, had always grumbled at what he'd regarded as a useless part of their routine. He'd never complain again!

Though he knew that an electric light must be burning, Chris found it difficult to see, the smoke was so thick. Trying to hold his breath, he raised himself up. To his amazement he floated away from his couch fastening. He should have been held down by the gentle deceleration. What had happened to the atomic motor? Had it been destroyed or damaged by the fire? Or had it been the cause of the fire?

These and a thousand other questions thrust themselves into his mind as he fought to control his choking. Then—though his senses were beginning to reel—the rigid discipline

and training took over. Chris forced himself to think calmly. He couldn't afford to lose control of his mental processes again.

Oxygen! He must get oxygen. The fire had already removed much of the lifegiving gas from the cabin's atmosphere. He and his companions would quickly suffocate in the blinding smoke unless he could get to—their space helmets!

As he thought of this solution, Chris shivered at the prospect. Their space-suits were stored, not in the "fridge", but in the main cabin below. What conditions were like there he didn't know. The cabin could well be a mass of flame and it might be impossible to reach the suits. If this was so they were indeed doomed. But whatever the circumstances he must make an attempt to reach the only pieces of equipment that could save their lives. Better to die in this almost hopeless task than to perish in miserable inactivity.

With the rasping coughs of his companions grating upon his ears, Chris fumbled for the hatch into the cabin below. There was still a confusion of unanswered questions in his mind, but those could wait. He must concentrate on getting at those suits. Oh! that was the hatch. His fingers encountered the familiar fastening, which he twisted. A gush of heat, like something almost solid, came from the main cabin as he swung the hatch open. It was impossible to go any further.

No, it mustn't be impossible. Even if he was scorched to a cinder, he must plunge into the searing heat and smoke. No flames were visible. Just heat and smoke. His chest feeling as if it was ready to burst, Chris tried to concentrate on his task. First he must try to judge the position of the locker holding the suits. There was no margin for error. Already he could feel that it wouldn't be very long before his senses left him. He wouldn't have time to fumble about seeking the locker.

Arms held out before him, Chris launched himself into the blackness. Pray God he was floating in the right direction.

Though each of the astronauts had to be as familiar with the cabin as he was with his own face, under these conditions even to remember direction was difficult. His hands struck something solid. The cabin wall? With a silent prayer of “thanks Chris knew it was the locker. He wrenched at the door. It didn’t move.

In a moment of near panic Chris again twisted the catch, but he’d done this already. No, it was the heat, causing the door to expand, that was the cause of the trouble. Exerting every ounce of his ebbing strength, he tugged again at the locker door—and it flew open.

It was just then that he had the first momentary bout of unconsciousness. As he recovered he had to fight back panic. Was he going to fail with the suits in his grasp? His fingers felt the shape of a helmet and he tore it from its mooring. It didn’t matter whose it was. If he was to be of any help to the others he must get it on instantly so that the lifegiving oxygen could flow. Though it was a bad fit—whether because he wasn’t wearing a space-suit or because it wasn’t his own he didn’t know—at least it would keep the acrid smoke from his eyes and lungs. With swiftly moving fingers Chris connected up one of the small emergency cylinders and within seconds he was drawing deep, delightful breaths of pure oxygen.

There was no time to lose, not even time to make his own helmet more secure. He must get back into the “fridge” with the other three helmets and oxygen cylinders if his friends were to survive. With strength returning all the time, and the burning pains in his chest decreasing every second, Chris managed to gather up the three helmets, which he held by their oxygen pipes like three vast onions. Under the other arm he held three weightless cylinders of oxygen. With a push he sprung in what he hoped was the right direction, but instead of reaching the hatch into the “fridge”, he collided with solid wall.

The temperature in the cabin was becoming unbearable. Light clothing worn for hypothermia was no protection from

the heat of the fire. If the crew were to survive at all and try to deal with the combustion, it would be essential for them to wear their protective space-suits. However, the first essential, Chris kept telling himself, was to find the hatch and deliver the helmets. With both his hands full he found the utmost difficulty in manoeuvring himself along the cabin wall. He would push off with his foot only to find that he was floating across to the other side of the cabin. There he would have to twist round and push off again. It was only after seven such transits that he found his objective. With a great feeling of relief Chris felt the rim of the hatch and pushed his burden through.

Thanks to the oxygen and helmet, his eyes were smarting much less. As he pulled himself through into the “fridge” he found he could just see the glimmer of the electric bulb through the thick smoke. This helped him to judge the direction of the couches and he groped his way towards them.

The first one he encountered was empty. Whether it was his own or belonging to one of his companions he couldn’t tell. Anxiously he stretched across to the next. In this one someone was still strapped. As he ran his finger lightly over the recumbent form, he felt the chest heaving in its last desperate struggle. Though, because of his helmet, Chris couldn’t hear, he could imagine the awful choking gasps that would be punctuating this losing struggle for life.

He grabbed one of the helmets that he’d left floating near him. As he raised the head of his friend on the couch he could tell it was Morrey. With difficulty he slipped the helmet on and made it as secure as he could. Then he had to find one of the oxygen cylinders which should be floating close at hand. Ah! there was one. Chris quickly attached it to Morrey’s helmet and hoped for the best. He couldn’t waste time seeing if the American regained consciousness.

With some difficulty Chris located the second helmet and cylinder. These he fitted to the next unconscious form, who, he could tell, was Tony. His heart sank as he completed his

task, for he'd been unable to detect any struggle to breathe as he had in the stronger Morrey. Without losing a second Chris fumbled about for the third cylinder and mask, and he fretted at the few moments it took him to find them. Serge was quickly attended to, and for the first time Chris could relax for a few seconds.

He knew that he'd done all he could for his three friends. If he had been in time they would revive. If not they would die. He felt the perspiration running down his face from a combination of the heat, his exertions, and his anxiety for his crew. The smoke was getting thicker again, but he managed to fumble his way to the couches. For a moment he felt thankful that none of his friends had managed to free himself from his contour couch. His task would have been much harder if the three bodies had been floating about somewhere in the smoke-filled cabin. He'd been the only one who managed to unstrap himself when the smoke first started to choke them.

The muffled groan that he heard as he approached Morrey's couch was a most welcome sound. This one, at least, would be reviving now that oxygen was blowing into his lungs. But what about Tony and Serge? With growing anxiety Chris felt his way to the mechanic's couch. His fingers could find no sign of respiration, so Chris began artificial respiration. With gentle, rhythmic pressure he squeezed and then released Tony's chest. Under zero gravity it was the only method he could apply. The "kiss of life" was ruled out by their helmets.

Chris had been pumping away at his young friend for five minutes without any response when something bumped into him. Dimly, through the smoke, he could see a helmeted figure. It must be Morrey, he thought with relief. At least one of his crew had been saved—for the moment. Morrey was making gestures by pointing to his helmet. For a moment Chris couldn't tell what the American meant. Helmet radio! It came to him suddenly that he'd forgotten to switch on. He did so at once, and immediately Morrey's voice came gasping

through.

“What’s happened? Where’s the fire? Have we arrived?” he panted.

“Don’t know anything,” Chris called back briefly. “Can you find out if Serge is all right?”

The figure of Morrey disappeared in the whirling smoke and moments later he reported that the Russian seemed to be recovering.

“Come and work on Tony,” Chris ordered Morrey. “I’m going down below to see if I can find the fire.”

“You’ll never do it, Chris,” Morrey protested as he floated into view by Tony’s couch. “I can feel the heat in here.”

“I’ll bring back a suit first,” Chris promised. “If I can get into one the heat shouldn’t worry me.”

“Good luck,” Morrey called as he took over the resuscitation of Tony. “Keep the radio on and sing out if I can help.”

“I’ll manage,” Chris said firmly. “You keep working on Tony. Let me know how Serge goes on.”

So saying he propelled himself towards the hatch. Even before he passed through it he could see his light clothing beginning to turn brown in the heat. Then he plunged into the cabin below.

Chapter Six

Chris could have shrieked with pain as he touched the door of the storage locker. He felt as if lumps of his flesh had been left on the hot handle. It was Morrey's voice on the helmet radio anxiously enquiring if he was all right that steadied Chris enough for him to gasp out that he was. More by feel than by sight he collected a space-suit and pushed off back towards the hatch.

He must have fainted from the pain of his scorched flesh, for the next thing he knew was that Morrey was peering through his vizor with obvious concern.

"Thank God you've come round," Morrey said fervently. "When you didn't answer my call I was coming after you. I could see by the way you floated through the hatch that you were unconscious. How are you feeling now?"

"Well enough," Chris lied. "What about the others?"

"Tony is still out but Serge is all right. As a matter of fact, it was his suit you brought out, so he's put it on and gone to collect the other three."

"He should have stayed here. That was my job," Chris winced.

"And how do you think you could have worn his suit?" asked Morrey. That silenced his leader, for the Russian's suit was smaller than Chris's. It would have been impossible for anyone but Serge to wear it safely.

"Do not worry. I am all right," the voice of Serge said in their helmets. "The suit is protecting me against the heat, but I cannot find the suit locker. I cannot see anything at all."

Chris was half-inclined to ask Serge if he could see where the fire was, but he decided not to distract his companion from the task in hand. Once they were all suited up it would

be time to try to deal with the fire.

“I think he’s responding.”

This time it was Morrey’s voice that Chris heard. Sure enough, when he went to peer over the recumbent figure that was receiving Morrey’s attention, he could see below his vizor a slight fluttering of Tony’s eyelids. Chris felt a great flood of relief. Soon he would be able to attend to other pressing problems. Meanwhile the temperature was still rising.

“Found it,” Serge reported triumphantly. “Stand by to take a suit off me.”

Chris propelled himself to the hatch, and a few seconds later a grotesque shapeless thing came floating through.

“I have it,” he called out to Serge below. “Can you cope?”

The Russian answered him confidently that he could, so Chris tried to identify the suit that was floating so conveniently at hand. It was his own, but before he could start putting it on, he must receive the other two from Serge. In a very short time this was accomplished and Serge came floating up through the hatch.

“I’ll see to Tony if you will help yourselves,” Serge said.

So while he struggled to suit up the now semi-conscious mechanic, Chris and Morrey helped each other to put on their protective clothing. Chris was in great pain from his burnt hand, and putting on the glove was real agony. Still—there wasn’t time to get any first aid. Unless they could control the fire speedily, first aid would be pointless.

“What’s happened?” Tony’s voice came suddenly.

“Lie still, old chap. We’ve a bit of a fire aboard,” Chris called back. “Stay on your couch till you’re feeling stronger. No, that’s an order,” he went on as Tony began to declare that he was quite fit.

One after another, Chris, Serge and Morrey entered the main cabin. Though they were now protected from the

smoke and heat, it was impossible to see anything, and all their investigations must be by touch. They split up and began feeling everything with which they came into contact. It was now, of course, that their gloves were a hindrance, for because they protected them from heat, they also prevented the astronauts from telling whether anything was hot.

“This cable’s gone!” Morrey called out suddenly. “In fact it’s still smouldering.”

“Where are you?” Chris asked urgently.

“At Number Two control panel,” Morrey’s voice answered. “Whew! This lot’s had it!”

It was at that moment that Chris himself discovered evidence of further damage. He’d come into contact with the hypothermia apparatus. The formerly smooth casing was distorted and split and a wire was glowing redly in the opening.

“The A.H.A.’s gone,” he reported to his friends. “Maybe it’s de-frosted us earlier than programmed.”

“That’s better than not doing it at all,” Tony’s voice declared with forced cheerfulness.

I wonder! Chris thought to himself. A tug at his arm attracted his attention, and he found himself floating after Serge. The Russian was signalling to him not to use the radio. Mystified, Chris acknowledged the request and followed his companion.

Serge had now produced a powerful torch and its beam penetrated about two feet of the gloom. Chris could see that he was being led to a part of the cabin away from Morrey. Following the light of the torch as best he could, he saw that Serge was indicating a spot where an oxygen supply pipe came through the floor from the storage tanks in the huge compartment below. Chris manoeuvred himself until he could see the pipe closely in the circle of light from the torch.

At first he didn’t know what he was looking for. Then he saw it. There was a faint split in the pipe, caused, no doubt,

by the heat in the cabin. From the way the smoke was being pushed away from the crack Chris saw that oxygen was escaping, and the significance of this struck him at once. While they had been frozen the oxygen content of the atmospheres in the cabin and the “fridge” had been reduced. Because of this the fire had been slow in spreading and would have smouldered itself out but for the crack. Now fresh oxygen was flowing into the cabin and it wouldn’t be long before there was sufficient for the smouldering cables to ignite. If that happened it was almost certain that the fire would penetrate to the fuel tanks. Chris shuddered as he pictured the consequences.

He could understand why Serge hadn’t wanted him to use his radio. Tony would be listening. This was a job for the mechanic and Tony would have insisted on leaving his couch although he hadn’t fully recovered. Yet Chris could see the terrible danger they were in, and he knew that neither he nor the others had Tony’s skill. Reluctantly he decided he had to call for Tony’s help.

“How are you feeling, Tony?” he asked as calmly as he could.

“Much better now,” the mechanic’s voice replied. “Have you found the fire? The smoke’s getting thicker.”

“Yes, we’ve found it,” Chris called back. “Some wiring has gone. Are you fit enough to do a small job?”

“Of course,” Tony answered indignantly. “What do you think I am on this trip? A passenger?”

“Well, take it easy. There’s a cracked oxygen pipe. Can you patch it?”

“I’m on my way, but I wish we could get rid of this smoke,” Tony replied.

Yes, of course, thought Chris. We’re all wearing our space-suits. I could open the airlock and let the smoke be sucked outside. It would also reduce the risk of fire. He told the others what he meant to do and asked them to stand by.

With the help of Serge's torch Chris found his way to the airlock.

Now he must exercise extreme care. Normally the air in the cabin would be pumped out both to conserve oxygen and to reduce the pressure difference with the vacuum outside. It wasn't possible to do that now. There was no time, and from the state of the wiring Chris doubted whether the pump would work. He must open the airlock only slightly. Otherwise he would be shot out into space and he hadn't a pressure gun with him.

First Chris opened the inner door in the cabin hull, and then at his request Morrey and Serge almost closed it behind him. He must now open the outer door, and this was the most dangerous part of the job. Ready? Yes, Morrey and Serge were ready. They had wedged something in the inner door to keep it open a couple of inches. Slowly Chris unscrewed the fastening. If he unloosed it too much the door would fly open outwards and he would follow it. He must stop just before the last turn of the screw. That would allow the air and smoke to be sucked out into the void without actually opening the door. As carefully as a burglar trying to unlock a safe Chris turned the screw.

He could see the smoke-laden air being drawn to the crack round the edge of the door. Another fraction of a turn and the smoke increased its rush to the void. This was as much as he dare open the door until the pressure inside had fallen. When it had dropped much further he could fling the door open so that the last vestiges of the polluted atmosphere would escape.

Inside the main cabin Serge was straining to watch the pressure gauge. Because of the dense smoke his vizor was almost touching the glass of the dial before he could see the falling needle at all clearly.

"Five eighty," he reported to Chris.

Tony had now managed to join his friends, and Morrey was showing him the damaged wiring. His whistle of dismay

came clearly over all their radios.

“Pretty bad,” they heard him mutter.

Until the atmosphere was a little clearer Tony would be unable to discover the full extent of the damage, but even the limited examination he’d made revealed a serious state of affairs. He made his way over to the storage cupboard where some of his tools and spares were kept.

“Four seventy,” Serge’s voice intoned.

It was now getting easier to see. But the better visibility brought no comfort to the mechanic. Great blocks of wiring had fused and blackened cables indicated the seriousness of the situation. To Tony it seemed less than an hour since he’d left the cabin to enter the “fridge”, when all had been well. This damage must have been building up over a long period. So how long had they been asleep?

“Three twenty,” Serge called.

There was still too much air inside the ship for Chris to open the door. He waited patiently as the smoke flowed past him. At about two hundred he’d risk it.

How was Tony getting on? As he waited for the pressure to fall, Chris allowed himself to start thinking about their position.

Was it hopeless? The ship was badly damaged and they were millions of miles from Earth. That their flight programme had been seriously interrupted Chris had no doubt. They were too far away from Earth to expect any help. Could they patch up *Neptune I* sufficiently for it to get them home?

“Two hundred.”

With a quick jerk Chris gave the handle a last twist and the door flew outwards. Fortunately he’d braced himself against a rush of air. Even so he felt the pressure against his body as the ship’s atmosphere was drawn out. In a few moments it was over. The pressure had dropped to zero and

inside the cabin was a cold, clear vacuum. Chris peered out of the hatch before he turned to rejoin his crew. It was immensely black, with a vast array of stars everywhere. One seemed much brighter than the rest. The Sun. Would they ever bask beneath its warming rays again?

Inside the cabin Serge and Morrey had joined Tony in his efforts to repair at least some of the damage. Chris heard them discussing where to begin.

“We’d better get the radio working again to let the Cape know what’s happened,” Morrey suggested.

“But how will that help?” Serge wondered. “They can do nothing for us!”

“No, but we might be able to tell them enough to prevent this happening to someone else,” Morrey persisted.

“Check the atomic generator and the batteries,” Chris instructed his crew. “Without power neither the radio nor anything else will work.”

With Tony in the lead the crew, now wearing magnetic-soled boots, climbed through the trap leading to the battery room below their cabin. At first this, too, was full of smoke, but it was drawn up rapidly through the trap, the cabin and the airlock. Its presence was sufficient to indicate that there was trouble here, too. Fire here could be even more serious than in the cabin. For within a few feet were many tons of highly explosive fuel, the fuel that would enable the chemical rocket to land them safely back on Earth. Or would it blast *Neptune I* into tiny fragments if the temperature became too high?

Chris had never thought faster in his life. With the ship’s wiring all gone haywire, there was no chance of switching on the refrigeration. To trace all the faults would be a major operation taking hours, or perhaps days. Meanwhile the temperature was climbing steadily. Already the needle on the temperature gauge was quivering over the red danger line. They must get rid of the heat somehow—quickly.

There was only one way to do it. As the solution burst upon him, Chris almost cried aloud with the agony of the decision he must make. Yet he knew it was the only hope of altering the critical conditions in the fuel storage compartment. The risk to the crew would be colossal, but was it any greater than not taking the chance it offered? He'd made his choice. He must give an order that no spaceship commander had ever given before. His crew would think him crazy when he issued his command. But he knew they would obey him. He tensed himself for the fateful moment. "Abandon ship!" he called.

Chapter Seven

The exclamations of shock that reached Chris over his radio didn't surprise him. There wasn't time for argument or explanation.

"Leave all hatches open and abandon ship," he snapped.

It spoke volumes for the loyalty and training of his companions—and for their faith in their leader—that Morrey, Serge and Tony instantly stopped what they were doing. Without wasting a second Chris led the way back into the cabin, closely followed by the others.

"Grab a spare oxygen bottle," he ordered, and, silently, his colleagues obeyed. Pressure inside the cabin was nil, so it was easy to open the inner and outer doors of the airlock. One by one Chris saw his companions launch themselves into the void. In traditional style he was the last to go. As he pushed off from the stricken ship he wondered if he was doing the right thing.

Each of the astronauts had made scores of spacewalks before. Each had spent many hours outside their various ships, or had helped with the assembly of orbiting space stations. They were skilful in the use of their space guns, knowing just how to control their movements with the minimum of expenditure of the gun's compressed air. Chris saw them floating together in a little bunch, waiting for an explanation.

A push away from the ship propelled Chris towards his friends. All around the stars stared at the four humans. Their unwinking gaze had a baleful air as if these celestial inhabitants resented the presence of the intruders. The sight of the star-spangled heavens had always filled Chris with wonder at its indescribable beauty, but now he shivered within his suit as he saw the vast emptiness surrounding the four astronauts.

What should he say to his friends? Chris felt the loneliness of the one in command when a fateful decision has to be made. On him rested the responsibility; he alone had to make the choice that could mean life or death. Or maybe it was only a choice between different ways of dying. If the vacuum of space could suck out the dangerous heat from around the fuel tanks as it had done the atmosphere, then there would be a chance of returning to the ship and perhaps repairing the damage. Now, if the ship exploded they would not perish in the same instant. Instead they would float along in space until their oxygen supply was exhausted. Then they would each become a tiny lifeless planet forever circling round the Sun.

Calmly Chris explained the reason for his strange action to his three friends. Tony had drifted about a hundred yards away from the others, but his voice came in clearly over the radio.

“Couldn’t we have stayed in the ship and risked the explosion while we were working on the job?” he asked.

“No,” Chris answered firmly. “I had thought of just flinging open the hatches while we did the repairs. But the temperature gauge was already at danger and I couldn’t risk even a second’s delay. The heat will be drained away far more quickly than if we were crowded round the tanks.”

“Fair enough,” the voice of Morrey said, “but for how long do you think we’ll have to waltz around here?”

“I don’t know,” Chris confessed. “We must give it an hour or two. At least the ship hasn’t blown up yet.”

“We have oxygen enough to last six hours,” the calm voice of Serge cut in. “If we wait that long and the ship is still in one piece, then we shall have to return and take our chance.”

“That just about sizes it up,” agreed Chris. “We shall just have to hang around and hope.”

“Pity we can’t let Control know what’s happened,” Morrey sighed. “It might have helped the guys who follow.”

“The ship’s radio is dead, and our helmet radios are too weak,” Serge pointed out. “So there’s no way of communicating.”

“But the Cape will know there’s something wrong because our signals have stopped,” observed Tony.

“Unless they think it’s just a temporary radio failure or a radiation belt,” Morrey contributed dolefully.

“We could let them know more definitely that we’re in trouble,” Chris said after a moment’s thought, and the other three all wanted to know how.

“By dividing up and each floating a few miles away from the ship,” he answered. “At the moment they are getting a single radar blip. If we space out they’ll get several, so they’ll know we’re in a spot.”

“They won’t be able to help us though, will they?” asked Tony.

“No, but that doesn’t alter our duty to report if we can. Are all your guns full?”

They checked their jet guns. In each case the reservoir was almost full, and they reported this to their leader.

“All right. Scatter, but keep the ship in sight,” Chris ordered.

They directed the jets of their guns towards *Neptune I*, and the thrust propelled them away from the stricken ship. It was a terrible feeling leaving this last solid link with Earth. Though it might disintegrate in a blinding flash of light at any moment, they were reluctant to move away from it. If the ship did blow up, then they were irretrievably lost. Even if Chris’s idea worked, the chance of repairing it and returning to Earth was very slim.

Tony kept rolling over as he floated away, but to him, of course, it looked and felt as if it was *Neptune I* that was describing huge circles around him. Only because the stars were accompanying the spaceship could he tell that it was he

who was twisting over. Another momentary burst from the gun and his movement ceased, or rather it looked as if ship and stars had stopped their dance around him.

Neptune I was getting smaller. Tony tried to spot his companions. All he could see was a speck of light beyond the ship's nose. It had disappeared a moment later, and Tony thought he'd gone far enough away from the vessel. He gave another burst from his gun, but he couldn't tell whether he'd killed all his motion away from the ship, or whether he'd reversed it. The only way he would know was to see if *Neptune I* became larger or smaller.

"It hasn't blown up yet."

The voice of Morrey in his helmet startled Tony for a moment. Though they were isolated from each other by many miles of emptiness, at least they could converse over their helmet radios.

"Everyone all right?" Chris's voice asked. "Don't lose sight of the ship or you'll never find it."

"We won't," the voices of Tony and Morrey chorused.

"When do you think it will be safe to go back?" Serge wanted to know.

"Let's give it an hour," Chris replied.

It was one of the longest hours the astronauts had ever known. Each felt he was a tiny speck of life in a vast, hostile universe. Though they and their ship were still speeding along together towards the giant planet at a fantastic speed, relative to each other they seemed motionless. As the minutes passed by and *Neptune I* suffered no disaster, their hopes began to rise a little. At least the temperature must have stopped climbing. If only they could return to the safety of their cabin they would be together no matter what happened. Tony wondered what Sir George and the others at the Cape would think when the incredible radar apparatus picked up their separate blips.

Good, Tony thought. That meant that he'd have time to

get to the ship, climb inside and find out if it was safe for the others to return. If there was still danger, better if just one of them faced it rather than all four. And that one, of course, must be himself. Tony never gave it a thought that if *Neptune I* disintegrated with him, his friends would be no better off than he was. Their end would just come more slowly.

Keeping up his conversation with the others and without giving a clue to his intentions, Tony fixed his propulsion gun and set off back towards *Neptune I*. Chris, he knew, would be furious at this insubordination, but Tony felt that the circumstances were just a little exceptional and as the mechanic of the crew it was his duty to be responsible for repairs. The ship grew larger against the background of darkness and stars and soon he could just read the name on its sunlit side.

“I can still just about see the ship. It’s only a tiny speck,” Tony called mendaciously over his radio. The next moment he’d manoeuvred himself alongside the open airlock and was about to climb inside. Suddenly he received a terrific shock. He felt a hand on his shoulder!

He twisted his head, and the movement set him revolving slowly. Then he saw a space-suited figure which he immediately recognised as Morrey. The American was making signals to him to keep silent, and Tony guessed in a flash that Morrey had had the same idea as himself and didn’t want Chris and Serge to know. He grinned back his understanding. After all, it was good to have a friend around, even though he’d meant to do the job alone.

“I’ll be glad when the time’s up,” Tony spoke into his helmet radio. “It’s a bit lonely out here.”

“Oh, I don’t know,” Morrey’s voice came in. “Not to have you always under our feet has a certain attraction.”

Tony grinned through his vizor to Morrey and the American contorted his face in return. Then Tony climbed inside the airlock.

All smoke had disappeared. The light from his hand torch

showed the open inner door to their cabin. With Morrey following he pulled himself through it. A quick glance round seemed to show that everything was as they had left it until a movement beside one of the couches caught his eye. Again he had the utmost difficulty in restraining the exclamation that would have given the show away; for it seemed that Serge had been doing some thinking, too.

Of course Tony was secretly disappointed that Morrey and Serge had robbed him of his great surprise. But at least they would prevent Chris from exposing himself to the dangerous exploration of the fuel tanks until they had been there first. It really was comical to hear the three astronauts continuing to talk as if they were scores of miles apart and couldn't see anything but the ship. They were sure that Chris didn't suspect. He would still be coasting through space a few miles away, unaware that his three companions were preparing to face danger without him.

Tony prepared to pass first through the hatch in the cabin floor. No smoke was coming up from the fuel compartment, which was a hopeful sign. As he was about to lever himself through the aperture, the leader's voice came loud and clear over the radio.

"Another couple of minutes and we'll go back to the ship," Chris said.

"Give us the signal and we'll see who gets there first," Tony answered, keeping up the pretence.

"Very well, but remember, no cheating," Chris replied. Making a noise that could mean anything, Tony entered the fuel compartment and swung the beam of his torch around.

"Chris!"

Morrey and Serge heard the startled cry. Peering through the opening, they saw a second beam of light. It was indeed their leader who had beaten them all. There was a hubbub of protestations and good-humoured accusations, but each knew what the others' motive had been.

“All right. Let it drop now,” Chris’s voice cut in at last. “Suppose we get down to work. The temperature’s down nicely.”

They began a detailed examination of the wiring. Tony removed several wall panels and groaned at what he saw beneath.

“It looks as if it’s taken a pretty bad knock,” he announced despondently, and the next ten minutes confirmed his gloomy opinion.

“The sixty-four thousand dollar question is—can this junk be repaired?” asked Morrey.

“We haven’t sufficient spare cable to do a complete job. Besides, it would take months even if we had,” replied Tony.

There was a strained silence as they realised the hopelessness of their position. They were millions of miles away from Earth in a crippled ship that it was impossible to repair. Perhaps it would have been better if *Neptune I* and its crew had vanished in one blinding flash. Now they were condemned to die slowly whilst still speeding further away from home.

Then one of the fundamental principles of all astronauts’ training began to assert itself—that no matter how hopeless the prospect seems, the struggle to survive must be kept up as long as life lasts. It was this thorough conditioning that had enabled many a crew, including Chris and his friends, to survive at times when all had seemed lost. As was to be expected, Chris, as leader, was the first to pull himself together.

“Well, we’ll just have to see how far we can get, won’t we?” he said coolly, and with that the crew seemed to shake off the black cloud of depression that had been hanging over them. Though none of them expected that they would be able to repair *Neptune I*, they would go through the motions. It would pass away the time and they would live up to the astronauts’ code of honour.

“First we’ll close the airlock,” Chris said. “We won’t be needing to go outside again.”

Serge wondered what his leader meant. They hadn’t seen any sign of damage to the ship that would necessitate external repairs, but Serge hardly thought that this was what Chris had in mind. It must be that, come what may, they wouldn’t leave the ship and separate again. They would remain inside and, when the time came, perish in each other’s company. Serge moved away to the cabin above. As he closed the airlock he shivered slightly, for it struck him that he was sealing them all in their tomb.

Meanwhile the other three had been debating where they should start on their futile task.

“Let’s get the radio working again if we can,” suggested Morrey. “We must let Control know what’s happened. Perhaps they can tell us where we are.”

“I think perhaps we should get the oxygen cycle working first,” Chris said. “Our bottles won’t last for ever.”

What he meant was that they must repair the apparatus that revived the atmosphere by pumping it through chemicals to remove impurities and returning oxygen. If they could get that functioning it would lengthen their period of survival very considerably. Chris didn’t allow himself to question whether this was worth while.

“That’s all very well, but how about a spot of light first?” said Tony. “Our torches won’t last much longer.”

So they agreed that they would tackle the lighting circuit to begin with. Morrey released oxygen into the ship so that the pressure inside was restored and they could remove their suits.

“That’s better,” breathed Tony. “Now we can get down to work.”

When a repair job had to be done, Tony took charge by common consent. His knowledge of all the bits and pieces in the ship was uncanny, and his three fellow crewmen were

content to work under his direction. First they removed all the wall panels from the fuel compartment, a tiring task in the confined space between the tanks and the ship's inner wall. Then, under Tony's direction, they set about tracing the lighting circuit.

"The wires we're after are blue and white," he explained. He told his companions how, for easy identification, each circuit had its own colour code. By this means it was possible to trace complicated circuits through the intricate confusion of cables that lay behind all the wall panels.

"While you are checking here I'll get into the battery compartment and work my way back," Tony said. "We'll have to be fairly quick because my torch has nearly gone."

True enough, the mechanic's torch was noticeably weaker, so Serge gave him his, which as yet showed no signs of exhaustion. The tremendous task, which each knew was hopeless, had begun.

Chapter Eight

The battery room of *Neptune I* lay beneath the fuel compartment. It was placed there not only to store energy from the atomic motor and solar panels, but also to act as a very effective shield between the motor and the crew's cabin. Without it radiation from the atomic motor would have been fatal to the astronauts. So Tony had to be very careful in what he was doing. At all times he must keep the massive batteries between himself and the source of those deadly rays.

With a wriggle Tony passed through a hatch in the floor of the fuel compartment. Morrey lit his way until Tony could use his own torch. Then he edged his way through a gap less than eighteen inches wide between the wall and the black glistening top of the battery. Because of his training Tony felt none of that "shut-in" feeling that many people would have experienced in such a confined space. He wriggled forward until he reached the huge terminals from which all power emerged.

Concentrating on the blue and white cable, Tony could see that it was intact. At least it had suffered no damage in the battery room, for, by dint of considerable exertions, he was able to trace it all the way to the point where it entered the fuel compartment above.

"All O.K. here," he called out to his companions. Then he began to worm his way back to the exit. Chris was there to help him through.

"The circuit has burnt out right from its entry," Chris told him. "Serge and Morrey are having trouble in following it. As the insulation has burnt away, it's hard to identify."

"Never mind," Tony replied. "They needn't waste any more time. We'll have to put in a completely new circuit and cut the old one out altogether."

All four went up into the crew cabin for a brief rest and for something to eat. It was only when they were strapped to their couches that they had time to think how hungry they were.

“I feel as if I haven’t eaten for months,” Tony sighed.

“You probably haven’t,” Morrey grinned back. “There’s no way of telling.”

True enough, because of the failure of the radio, the crew were unable to say whether they had been under hypothermia for days, weeks or months. Neither were they aware of the point they had reached in the flight programme when disaster overtook them. The chronometers and recording instruments had been put out of action by the catastrophic electrical failure. Whether the giant planet after which their ship was named was near or far, they couldn’t know.

To conserve their torches only one was used. In the dim light the crew ate their “weightless” meal. This consisted of specially prepared cubes of food that they placed inside their mouths so that no fragment could escape to float about the cabin. The drink, too, was in plastic tubes which they squeezed into their mouths. Any free liquid in a cup would have broken up into thousands of little globules without gravity to hold it together.

“Ugh! What would I give for steak and chips!” sighed Tony as they finished their meal. Though the food was quite appetizing, it wasn’t like sitting down at a table and plying a knife and fork at a piled-up plate. Though none of them expected ever to see Earth again, the crew talked together as if nothing was more certain. Each described his favourite dish and valiantly kept up the fiction that all was well. They felt reluctant to resume their hopeless task. It was pleasanter to dwell in this world of make-believe, where the mind shut out the grim reality that lay ahead. It was only when the torch gave out that they bestirred themselves to return to the mass of scorched cables.

From one of his storage lockers Tony produced a coil of white-coloured cable. He explained that this was the colour code for repairs and he would have to mark it to give the circuit identity. He had a supply of coloured markers, like crayons, with which he could put rings of various colours on the white cable. A blue marker on the white insulation was sufficient to indicate the nature of this particular piece of wire.

The new cable, with its occasional blue ring, was threaded through the twisted mass of burnt wiring. It looked like a long white worm that had sprung up from the ashes of its predecessors, and it took many hours to do the job to Tony's satisfaction. Long before their task was finished, all but one of the torches had faded out. Now the last one, too, showed signs of imminent exhaustion. It would be touch and go as to whether Tony would be able to make the last vital connection before they were plunged into eternal darkness when further work would be impossible.

Chris, Morrey and Serge watched Tony anxiously. Though they knew that his success would not affect their ultimate fate, survival for as long as possible had become a point of honour. To get the ship's lights working again would not only help them in other tasks, it would also give a tremendous boost to their morale. Somehow, it seemed, they could fight on in better heart if they could see each other rather than ending their days in the isolation of complete darkness.

"I think that's done it," Tony gasped at last. "You can throw in the switch now, Chris."

Tony had been working under tremendous strain in a most awkward position. Sweat was pouring from his face as he eased his aching body from the wall cavity in which he'd made the final connection. Even the dim light of the dying torch showed the perspiration streaming down his cheeks. The feeble light moved and settled on a panel of switches. Then a hand came in to the barely illuminated circle and felt for a switch. Everybody watched and waited.

With a quick movement Chris depressed the switch. The next instant their hearts leapt with joy, for the cabin was once more flooded with light from the bulkhead lamps. Tired though he was, Tony joined the others in a strange weightless war-dance to celebrate this tiny victory against the appalling catastrophe that had befallen them.

It was quite some time before they had calmed down. Perhaps, unconsciously, they had used the restoration of light as an opportunity to work off some of the tension they felt. For the most stoic astronaut, trained as he is to meet death fearlessly, feels a quiver within him when he knows that his end is imminent. Like a good leader, and because he felt it himself, Chris knew all this, so quite firmly he insisted that they all took to their couches to get some sleep. In their highly excited state he knew they would need some help. He gave his crew a sleeping tablet each, took one himself, and then tightened the straps on his couch. Within minutes the cabin was still and silent but for the heavy breathing of the sleeping young men.

When next Chris opened his eyes he felt a delicious sense of lassitude. Even though he soon remembered the happenings of the past, he had no wish to move from that comfortable couch. There was no real need to, he told himself, so he wouldn't mind if he spent the few hours or days that he had left in this delightfully relaxed fashion. None of his companions was stirring, so he closed his eyes once more and tried to rid his mind of all thought.

He soon found that this was impossible. In spite of himself his brain began to ponder the situation that they were in. They were not the first astronauts to be lost in space and they wouldn't be the last. That wasn't what was bothering him so much, Chris thought with a slight frown. It was puzzling.

“What had caused this disaster, this waste of so much skill and effort?”

The light in the cabin glowed cheerfully. At least here was

something they had achieved, Chris thought as he fixed his gaze on the shining source. If they hadn't, by now they would be groping about in total darkness without the prospect of seeing a light again. The only glimmer of illumination they would get would be from the distant stars and the small sun through the viewing post—not enough to see each other, let alone to carry out repairs.

Was it any use making further repairs? It would be impossible to undo all the damage that had been caused to the spaceship's electrical system. Even to trace and replace a few of the simplest circuits would take many hundreds of man hours. They would never get *Neptune I* to function as before. The expedition was a write-off, and so was the crew.

But, of course, he mustn't let these thoughts infect his crew. They were all intelligent enough to understand the situation and their courage would not fail. Even so, it would be easier to carry on if they had some specific task to do. Chris pondered what should be their next objective.

Naturally he would like to get the radio working once more. It would be a great comfort to hear human voices other than their own. He'd no doubt that Control had already written them off as dead, and Sir George, Whiskers, Billy Gillanders and all their friends at the Cape would be getting used to the idea of their loss. Would it be kind to shock them by speaking as if from the dead? It wasn't as if things could be put right. Their fate couldn't be altered, but only postponed. Then their friends would have to suffer the same grief a second time. Yet Chris knew that it was his duty to report what had happened to his Chief so that any lessons learned could be passed on. If that were done, the Neptune expedition would not have been a complete loss.

However, he decided to put off any work on the radio. They would try, first, to discover the cause of the disaster. There didn't seem much point in contacting Control unless they could pass on some vital information. The disturbance that contact would cause wouldn't be worth-while unless it was to help the crews who would follow them.

Another task was more urgent—to repair the oxygen cycling equipment. Because most of their long journey to the great planet would have been under hypothermia, their oxygen needs would have been greatly reduced, so the supply of bottled fresh gas wasn't great. To a large extent they depended on the re-cycling of the cabin's atmosphere through the machine that would restore its purity. And, of course, they had lost a lot of oxygen by the combustion of the cables and in opening the airlock to draw out the smoke and heat.

If they could get the equipment working once more, it would greatly extend their spell of life and might give them sufficient time to trace the fault that had terminated their hopes so abruptly. So, having taken a decision, Chris relaxed once more and indeed must have dozed, for the next thing he knew Tony was calling to him.

“Come on, Chris. Breakfast is ready,” the mechanic was saying with rather brittle cheerfulness. Chris released one of his straps and sat up on his couch. He could see that the other three were all awake, and he didn't contradict them when they began teasing him for having slept so long.

During the meal Chris told his crew about their next task. At first Morrey and Tony protested that the radio should be tackled now, but he explained his reasoning, and they had to accept the wisdom of his choice.

“How much cable have we, Tony?” Chris asked.

“Oh, quite enough for that job, with some left over,” Tony answered. “We'll have enough, just about, for the radio as well.”

“Right. When you've all finished stuffing yourselves we'll make a start,” Chris declared.

To strip down and almost completely rebuild the oxygen purification plant was a much greater task than repairing the lights. Working flat out, it took them a day and a half just to uncover and trace all the damaged wiring. Tony performed miracles with his tools and his companions secretly admired

the deft and confident way he used them, though of course they would never let him know that. Chris had to call a halt and order them all to sleep at the end of their first “day”, but they eased off of their own accord when the last burnt cable had been removed.

While his crew had been concentrating on the first part of their task, Chris had slipped away to check on their oxygen stock. Of course there was still a vast amount of liquid gas in the huge tanks, but there was no way of utilising this for breathing. This liquid oxygen was for the chemical motor to “breathe” and not the crew.

Their supplies were stored in cylinders under high pressure, and, with the help of the purifying apparatus, they would have had ample. But because of what had happened, their stock had been very much depleted, and Chris could see that the job they were doing had become urgent. Without revealing his disquieting discovery, he returned to assist his crew.

By the time all the damaged wiring had been removed the cabin was looking like a junk yard. It couldn't be dumped out into space until the air pumps were working. It would have meant far too many journeys through the airlock to get rid of all the wiring, and each time some of the precious oxygen would have been lost. It would be more economical to put on space-suits, pump out the cabin's atmosphere, open both doors of the airlock and sweep the debris out into the void. So they must wait until the pumps could transfer the cabin's atmosphere into storage cylinders. An added difficulty was that, in a weightless condition, the coils of burnt cable wreathed about like long thin snakes. Until Morrey undertook to roll them all together and strap them down on to one of the contour couches, the sweating astronauts were frequently entangled in the metal coils.

Tony looked anxiously at his rapidly diminishing stock of new cable. A repair of this magnitude had never been foreseen, and only a minimum amount of spares were carried. However, his main worry was whether the electric

pumps themselves had been damaged, for of those he carried no replacements. There were two of them, and it was an anxious moment when, many long hours later, he connected up the current.

They worked! A major task had been successfully completed. The pumps began forcing the thickening atmosphere through the filters that removed impurities and returned breathable air to the cabin once more. It took only another two hours' work to start the exhaust pump, and before they finally collapsed with fatigue they were able to clear their encumbered cabin by pushing the debris into space.

Now, with the lights burning steadily and the atmosphere being renewed, the crew could reflect on their remarkable achievement before they finally sank into an exhausted sleep.

How long they slept none of them knew. The chronometers were not working and lack of contact with Earth prevented them from assessing the passage of time. During training they had been confined to mock cabins without watches, and they had found that the human body's inbuilt clock is not too reliable. Only when they could speak once more with Control would they have any idea just when and where they were.

They all agreed that the next chore must be to repair the radio, though at times Chris had his doubts about the wisdom of this. Would not conversation with their friends at the Cape make their fate harder for all to bear?

Chapter Nine

Sir George Benson, Mr. Gillanders and Whiskers Greatrex had been silent for a long time. At last Whiskers spoke.

“Are you still keeping *Neptune I*—or what is left of it—under observation?” he asked.

“We do take a look periodically,” Sir George told him. “We can still pick up the blip of the ship on our deep space radar. Of course we’re only picking up a single blip now.”

“Why is that?” Whiskers enquired.

“Oh, simply because after the initial explosion, or whatever it was that broke up the ship, the bits and pieces would drift together again under their slight mutual gravitational attraction.”

“You don’t think it’s a good sign that you’re only getting a single blip again?”

“I’m afraid not,” Benson answered heavily, “but we shall continue to track the debris as long as we can.”

“It’s a sort of final gesture of farewell to Chris and the others,” said Billy Gillanders. “But we shall soon need the tracking facilities for other probes.”

While they had been talking they had heard Mrs. Greatrex answer the telephone. She now interrupted the three friends.

“Your office is on the phone, Benny. They want to speak to you urgently,” she said.

Sir George stood up. He was constantly receiving urgent messages about different space projects, and for this reason he had always to leave a phone number with his office. Even if he went to a theatre or restaurant—which was rarely enough—he had to tell his staff where they could contact him. He walked out into the hall to answer the telephone, and Billy and Whiskers heard him speaking. Then they were

startled to hear the receiver crash. The next instant Benny rushed into the lounge, all colour drained from his face.

“We’re getting radio signals from *Neptune I*,” he burst out.

There was at least three seconds of stunned silence as Billy and Whiskers struggled to absorb this amazing news. Then the floodgates were opened. They inundated Sir George with a torrent of questions.

“All I can tell you,” he said, “is that twenty minutes ago our station at Singapore picked up the continuous signal from the ship. There’s no doubt about it. It’s at the correct frequency and from the right direction. I’ll have to get back at once.”

“I’m coming too,” Whiskers shouted. Mary Greatrex smiled understandingly as the three great men raced like schoolboys to Sir George Benson’s car.

“Why not go in mine?” Whiskers panted. “I can knock a quarter of an hour off the journey compared with this huge thing.”

“Not on your life,” Sir George replied. “I wouldn’t trust you to drive us in that old bone-shaker. Besides, my car has a radio telephone and I must get some messages out.”

It was arranged that Mr. Gillanders should drive the Bentley, so allowing Sir George to devote himself to the two-way radio. Whiskers sat forward on the edge of the back seat so that he could hear anything that came over the air. As Billy urged the big car towards London, Sir George spoke into the microphone.

“Benson calling. Benson calling H.Q., Over,” he said.

There was a slight crackle as the radio replied.

“H.Q. calling Sir George Benson. Over,” the voice said.

“Benson calling H.Q.,” Sir George snapped. “Now listen. I want all our dishes beamed on to the ship and full recordings made. And get me a plane laid on for the Cape. Over.”

“Very good, sir. We’ve got a recording of the signals Singapore picked up. Stand by and I’ll switch on.”

Sir George turned up the volume so that all could hear. From the radio of the speeding car came the whistling noise that was the voice of *Neptune I*. The three men listened to the weird sound which, at that moment, was music in their ears. There was no doubt about it. This was a signal from the radio of *Neptune I*.

What could it mean? Obviously the spaceship hadn’t been destroyed. Maybe it had only been the two radios that had packed up in spite of the conviction of the experts. But the radar screen had shown that the rocket had disintegrated into a number of pieces. Perhaps Sir George’s theory that the pieces had drifted together again was also wrong. These, and a thousand more questions sprang into the minds of the three men as they sped towards London. But the big question for all of them was “Is the crew alive?”

The Bentley screeched to a halt outside the red brick building in Theobalds Road. Without even waiting to close the car doors, and oblivious of any parking offence, the three men tore into the building and raced to the lift. Never had that lift seemed to move so slowly. In forty-four seconds flat they burst into Sir George’s office.

“Still getting it?” Benson snapped the question at the small group of men who were waiting.

“Yes. We’re picking it up from several stations now,” a bespectacled young man answered.

“Any sign of the data signal?”

“Not yet, sir. But of course we’re ready for it if it comes.”

“Er—no voice messages?” Sir George just succeeded in keeping the tremor out of his voice.

“Afraid not, sir. The computer is working out position and velocity at the moment. It should be through at any time now.”

“Right. Now I’m off to Heathrow. That jet is laid on, isn’t it? Billy, can you get us to the airport without smashing us up?”

“Er—excuse me, Sir George,” another of the men interrupted. “We’ve got a helicopter waiting for you on the roof. We thought you’d prefer it.”

“Good for you.”

Sir George flashed a grateful look at his assistants. He must get to Cape Kennedy just as soon as he could. Only there were the full facilities for tracking, communicating with, and controlling *Neptune I*. He was about to lead the race up to the roof when a girl came in with a sheet of paper.

“From the Cape,” she said simply.

With uncharacteristic brusqueness Sir George snatched it from her and read it rapidly.

“Nine hundred and fifty million miles, and on course,” he muttered as he handed back the paper. “Come on. What are you all waiting for?”

The helicopter, its blades turning, was waiting on the flat top of the building. Inside the pilot was ready and some short steps led to the interior. Sir George was up them in a bound, followed by Mr. Gillanders. When Whiskers went to follow the director leaned out of the “chopper”.

“Not you, old boy,” he said. “We’ll have to leave you behind.

Poor Whiskers stopped half-way up the steps. His jaw dropped and somehow this made his fearsome moustache droop. He looked stunned. Sir George couldn’t find it in his heart to leave his old friend behind, knowing how much Chris and the others meant to Whiskers. His face relaxed momentarily.

“But you haven’t got your toothbrush with you,” he pointed out.

Whiskers was in the helicopter in one bound. He wasn’t

going to give the Director a chance to change his mind again. Hardly had the door been closed before the blades speeded up and the craft began to lift and tilt. The roof-tops fell away below them and the map of London started to slide beneath. Within quite a few minutes the speeding traffic of Western Avenue and the great airport hove in sight.

The helicopter circled as the pilot received his instructions from the control tower. He was directed towards a little-used part of the port and was soon sinking down to a concrete pad. They landed with only a slight bump. Sir George, Billy Gillanders and Whiskers spilled out as a car drew up. As it raced them across the tarmac to the waiting Comet the Director felt some pride in the efficiency of his staff. They were streaking over the English coast not quite two and a half hours from the time that the Singapore station had received that astounding signal.

“At least they will know we’re still alive,” breathed Tony as he straightened his aching back.

“Not yet they won’t,” an equally weary Morrey pointed out. “Our signal may take some time to reach Control. How long—we don’t know.”

“They must have given us up for lost,” Tony said.

“Well—aren’t we?” Serge asked quietly.

“Come now, we all know the position,” Chris said rapidly. “Because Tony has made one of the transmitters to work our situation hasn’t improved.”

“Oh, you can’t say that, Chris,” Tony protested. “We’ve got a light, we’ve got air, and now we’re sending out a signal that will help Control to find us.”

“All that is true,” the leader agreed, “but it doesn’t help us very much. I suggest we have a long break and get some rest.”

Chris was a little worried. He could sense that in Tony at

least, and perhaps Morrey, there was beginning to grow a feeling of hope. This was dangerous, for the crushing disappointment that they must inevitably suffer might well lead to the breakdown that he was so anxious to avoid. Had he made a mistake in organising efforts to repair the damage to *Neptune I*? Would it not have been better to have accepted their fate with resignation and to have awaited the end with what fortitude they could muster? Perhaps he'd been wrong to try to distract his friends by attempting to do some repairs. They had succeeded so well—so far—that a glimmer of unjustified hope must be forcing itself into all their minds. Yes, he, himself, must avoid the trap.

Exhaustion had conquered Chris's three companions long before the leader's troubled mind had yielded to the fatigue of his body. In the end he, too, slumbered deeply.

He was awakened by the voices of Morrey, Serge and Tony having a lively discussion. As he lay without moving or attempting to release the straps of his couch, Chris listened and knew that his fears were justified.

"I tell you that once we can establish two-way communication with Control we're all right," Morrey was saying with conviction. "We can get our position and they can work out a new programme for us."

"That's right. And I can get instructions how to repair any circuit I'm stuck with," Tony declared brightly.

"But haven't you said you're running short of spares and cable?" Serge asked.

"Look, fellows," Chris interrupted desperately. "Don't get any wrong ideas. The ship is badly damaged. We can never put it right. We all understood that from the beginning. So don't build up any false hopes. Besides, we don't know how long we were under hypothermia. It may have been days or many months. The A.H.A. would have to be repaired if we were ever to get home—and you've seen the mess that's in."

The leader's words had a sobering effect on the rest of the crew, but Chris was under no illusion that his troubles were

over. It wouldn't be long before they were hoping and expecting to save themselves.

"Then do we carry on?" Morrey demanded a little truculently.

What was Chris to do? Things weren't working out quite as he'd expected. He'd certainly never thought that Tony would make such a good job of the repairs he'd so far attempted, even though his opinion of his young friend was of the highest. Now that the atmosphere was being constantly renewed, they would never suffocate so long as they were sparing with the addition of new oxygen. It was far more likely that they would reach the end of their food supplies. And if they were condemned to speed for ever through space, how long would it be before they all went mad?

He sighed. His duty became plain. If it was possible to repair the transmitter and report what had happened to the Cape, it seemed that he must do it no matter what the effect would be on the four astronauts. If they succeeded—and he believed this was quite possible—no one could foretell how any of them, including himself, would react. He didn't want Uncle George and the rest at Control to hear if his crew cracked up. Rather than that, Chris told himself, he'd smash the transmitter beyond repair.

The eyes of his three companions were on him. They were waiting for an answer to Morrey's question. Should they carry on?

"Yes," Chris replied. "We'll have a go at the transmitter."

The tension broke and, led by Tony, the crew set about their task with determination. If he'd refused would they have obeyed? Chris wondered. Yes, he was sure their loyalty would have overcome any inclination towards mutiny. But, in their hearts, they would possibly have accused him for preventing them from hearing once more the sound of a human voice.

To Tony the transmitter was, perhaps, the most familiar of

the numerous pieces of apparatus which the spaceship carried. As he worked on it his mind went back to the first transmitter he himself had built some years before. He could never forget how he'd smuggled it aboard one of the orbiting space stations and how it had been the sole means of communication at a very critical time. The Commander of the space station had become mentally unbalanced after he'd discovered a means of focusing solar radiation. He'd threatened to scorch all the vegetation on Earth unless he was made universal dictator. In pursuance of his plans he'd taken control of the space stations' means of communication—but for the home-built transmitter that Tony was hiding in his cabin. As a result of Tony's message UNEXA had been able to regain control of the station and a worldwide catastrophe had been averted.

After that Tony had built more instruments, and transmitters had become his chief love. Now he worked on tirelessly to get the radio of *Neptune I* to work again.

Chris, too, thought about Tony as he watched the skilful way he worked. Tony had been quite a young boy when they first met. As a result, Tony confessed, he'd bitterly regretted neglecting his opportunities at school, but having been inspired by the astronauts, he had set to work to become the cleverest mechanic in the space business—and he'd succeeded.

“How is it going?” Chris asked, floating over to watch his friend.

“Another hour should do it. So get your first message ready,” Tony grinned back.

Chris returned thoughtfully to his couch. He had no doubt that soon he'd be able to report to Control. What should he say? How could he convey to them the plight that the crew and the ship were in?

Chapter Ten

After a record breaking flight, the Comet touched down on the Cape Kennedy airstrip. During the journey, Sir George had kept in constant radio contact with the Cape, but there was little fresh to report. The steady signal from *Neptune I* had been coming in clearly, and its precise position, direction and speed had been computed by the vast mechanical brain that was such an important part of the installations of the great spaceport.

However, nothing had been heard of the three-hourly data signal. In spite of the keenest attention not a bleep had been received. Nor, of course, had any verbal messages come through. As Sir George, Billy Gillanders and Whiskers were whisked by car from the airstrip to the huge Control buildings, the Director was speculating whether there was a simple and disappointing explanation for the tracking signals. Could it be that, though the ship had been damaged and partly destroyed, the automatic transmitter, that sent them winging continuously over so many millions of miles, hadn't been badly damaged, and that somehow it had started to function again of its own accord? He must consult the radio experts who had been responsible for the construction and installation of this piece of equipment.

The conference room! That was the place to which Sir George and his companions hurried as soon as their car had screeched to a halt. An order from his jet plane, sent by radio an hour before, had called the conference together.

All the top experts were gathered in the room, silently awaiting their Director.

As he entered Benson was met by Professor Boronoff and Dr. Rosenberg, the Russian and the American who, with Mr. Gillanders, were his deputies. A slight murmur rippled round the room as the Director stood in front of them.

“Ladies and Gentlemen,” he began, “I won’t waste time on unnecessary courtesies. You all know why I’ve called this emergency meeting. We’ve got to find what is happening to *Neptune I*. I take it that a continuous watch is being kept for data and voice signals?”

“That is so,” Professor Boronoff assured him. “If any signal is received we will get a call at once on that telephone.”

Sir George looked round and saw the instrument on a side table. There flashed through his mind the thought that he would gladly give all he possessed—including his life—if only that phone would ring to say that all was well aboard *Neptune I*. He jerked his attention back to the meeting.

“De Noble,” he said, addressing the Dutch radio wizard, “do you think that the tracking signal transmitter could re-start operating on its own after being silent for so long?”

This was the crucial question, but De Noble was reluctant to be dogmatic.

“Well—it all depends on how badly it was damaged,” he began, but Sir George interrupted sharply.

“Come, man, this is too important to play about with words. Could this transmitter, no matter what the extent of the damage, be re-activated without human assistance?”

De Noble knew that everyone in that room was awaiting his answer with bated breath. He flushed and then went deadly pale. Stammering slightly, he began to speak.

“I—I don’t think it could, but—”

Sir George was almost beside himself with impatience.

“Yes! Or No!” he roared.

“Er—no,” De Noble squeaked back.

“Right, ladies and gentlemen,” the Director said briskly. “That means that at least one member of the crew has survived, whatever has happened to *Neptune I*. Maybe others, maybe all, are still alive. What other conclusions can

we draw?"

"Well, obviously the power plant, too, is operating," Mr. Gillanders said. "Or, at least, the batteries are intact."

"I believe the atomic motor is still undamaged," Dr. Rosenberg declared. "If the shielding had been destroyed we should have detected some radiation. We've found none."

"Then how do we account for the apparent break-up of the ship?" Sir George demanded.

"Not the whole ship, Director," Professor Boronoff answered thoughtfully. "The radar blips didn't tell us the size of the pieces that broke away from *Neptune I*. It may well be that they were quite small parts, or pieces of the outer skin. It was only because all signals had stopped that we assumed the ship had broken up."

"I have been doing a few calculations," a voice said from the back of the room. Everyone turned round to see who had spoken. It was Goldstein, one of the Cape's best mathematicians. He fumbled in his pockets and produced a few yards of paper tape, evidently from one of the smaller computers. He scanned the tape as if to make doubly sure of what he was going to say.

"My calculations show," he said deliberately, "that the pieces that broke away from the ship could not yet have been drawn back to it by the ship's gravity. They would go back to it gradually, perhaps over a period of some months—certainly not as quickly as this. And there's another strange thing. All these separated pieces appear to have rejoined the ship at the same time. I would have thought that the odds against their doing that are astronomical."

Sir George staggered as the thought struck him.

"Great Heavens!" he gasped. "Those blips could have been the crew!"

There was a moment of complete silence. Then everyone began to speak at once and the hubbub mounted higher and higher. If the crew had left the ship in their space-suits and

gone a moderate distance away from it, the radar would have shown separate blips. They could have returned to *Neptune I* by using their jet guns.

However, the difficulty was that the crew should still have been under hypothermia. The A.H.A. was not due to defreeze them for some time yet. If those separate blips had been the crew, it could only mean that there was something seriously wrong with the flight programme. Something must have caused the hypothermia to end prematurely. The crew had been brought back to consciousness long before they should have been. But the return of the blips to the ship and the reactivation of one of the transmitters must mean that some, at least, of the crew were alive and active.

Sir George beat his hands together in an agony of intense thought. Only if one of the other transmitters began to work could he really be sure that this theory was right. If the voice transmitter began to operate he'd be able to speak to the crew. He almost dreaded the first words from those he'd given up for dead. But if even one of the crew had survived what must Control do?

The supreme task, of course, must be to get any survivor back to Earth. Every other objective must be abandoned for this. They must start at once to examine the possibility of *Neptune I* being brought back to Earth with whoever was still inside it. Until they knew precisely the state of the ship it would be impossible to work out a complete programme, but much preliminary work could be done now with certain assumptions.

Sir George called the meeting to order.

“Ladies and gentlemen,” he began, “from this moment onwards I want all our planning to be based on the assumption that at least one of the crew has survived, whatever catastrophe has struck the ship. I'm sure we're all unanimous that our sole objective must be to get *Neptune I* back. Any thought of carrying out the original programme must be abandoned. We must start to work at once on efforts

to determine how this shall be done. Until we know the state of the ship, we cannot decide on one firm flight programme. Therefore I would like us to discuss various alternatives and also to try to foresee the present capabilities of *Neptune I*.”

There was general agreement with what the Director had said. A new spirit seemed to surge through the men and women in that room. They had seen all their work on the most ambitious and expensive space venture yet mysteriously destroyed. They had come to accept the deaths of four young men whom everybody knew and liked. But now they had something to work for, something to hope for.

At Sir George’s direction, they split up into small groups of specialists in the many aspects of the project. Each group retired to some mysterious retreat to work out in detail all possible variations of the situation in their own particular field of interest. They were to report back to Sir George and Mr. Gillanders as soon as possible.

After the various groups had moved away to start their vital tasks, only Sir George, Mr. Gillanders and Whiskers were left in the room. Throughout the whole time Whiskers hadn’t spoken, but his friends could see how moved he was. They also knew the question that was going to burst from him.

“Benny,” he gasped, “for Heaven’s sake find me something to do to help. I’ll go insane if I’ve just got to hang around and do nothing. Surely there’s something I can do?”

The Director smiled kindly at his old friend. He knew exactly how Whiskers was feeling. He put his arm round his friend’s shoulders and led him out of the room.

“I’ve got a job for you in Control,” he said. “Come this way.”

“I’ll do anything, Benny. Anything!” Whiskers declared passionately. “What do you want me to do?”

“I want you to start broadcasting to *Neptune I*,” Sir George replied. “Chris—or whoever it is—may be able to

receive us even if they cannot transmit themselves. I can't think of anything that would cheer and encourage them more than to hear your throaty old voice."

"Gosh! What'll I say!" Whiskers gasped. "There's—there's so much I'd like to."

"I know. But our messages have got to be severely practical. We can indulge in back-chat once we know they're safe," Benson replied.

They had arrived at the huge control room. Usually it was fairly crowded, but now only about a score of men were there, and they had gathered in the radio section, which controlled sensitive receiving stations all over the globe. From a loudspeaker came a peculiar warbling sound—the voice of *Neptune I*! It gave Sir George and Whiskers a heart leap to hear this signal coming across so many millions of miles.

With quick strides Sir George made his way to the group, Whiskers half a pace behind.

"Anything else?" he snapped.

"Nothing," one of the technicians reported. "Not a sound from either of the other transmitters. We're keeping a round-the-clock watch."

"Good. I'll get the ship's position and velocity in a moment. Get ready for us to transmit. Mr. Greatrex is going to start calling *Neptune I*."

The Director hurried away to get the latest information from the computer room, while Whiskers wondered what he should say.

"Ready, sir," one of the technicians called. He motioned Whiskers to a chair before a microphone, and the ex-officer took his seat. The transmitter had been warmed up. All was ready for him to send his voice across space in a forlorn attempt to communicate with the crew.

Whiskers felt his throat go dry. Everyone was waiting for

him to begin his broadcast. Well—here goes!

“This is Control calling *Neptune I*. This is Control calling *Neptune I*. Are you receiving us?”

It seemed so very inadequate, but what else could he say? This simple message, speeding towards the ship at one hundred and eighty six thousand miles an hour, was unlikely to be heard. How long would it take to get there? Probably anything up to three-quarters of an hour. A reply would take just as long to come. But of course there might never be a reply.

“Control calling *Neptune I*.”

Whiskers kept repeating the call mechanically. His words were beamed at the ship by the world’s most powerful transmitters. Equally powerful receivers strained to catch the slightest murmur from the stricken vessel, but only the sound of the tracking signal came through, and this could tell the anxious listeners very little. The data signal would have been much better. Best of all would have been the spoken word of some member of the crew.

Nothing! Whiskers drummed his fingers on the table-top. For over two hours he’d been repeating his call in parrot fashion. It had seemed silly to say much else until he knew that it was being received. But suppose it was being received but the crew were unable to reply. Perhaps whoever was aboard *Neptune I* could hear his words but couldn’t broadcast back.

Whiskers checked himself sternly. He saw that he was beginning to assume that some of the crew were still alive. It would be fatal to build up hopes once more. He returned to his task.

To keep repeating the useless call to the spaceship didn’t call for much mental effort and soon his mind wandered again. It was as he listened to the warbling tracking signal in the background that the idea came to him. If the survivors on *Neptune I* were unable to use the voice transmitter, they could at least show their presence by interrupting the signal

that was coming through. Yes, that was it. It would add some variety to his message if he broadcast that suggestion.

“Tell the Director I’d like a word with him,” Whiskers called to a passing technician, and in a moment Sir George came hurrying up.

“Benny,” Whiskers burst out. “I’ve been thinking. They may not be able to use the voice transmitter. Is it possible to send a morse signal over the tracking transmitter? Even if they can just interrupt the signal in a regular pattern, it will show they’re there.”

“Excellent idea, Whiskers,” the Director agreed. “You’ll suggest that in your call?”

“That’s what I had in mind,” Whiskers grinned. It was great to think he’d made a positive, though small contribution. He turned to the mike with enthusiasm.

“Control to *Neptune I*,” he called. “We are receiving your tracking signal. Can you interrupt it in a regular pattern? Please acknowledge this by three blanks.”

Sir George nodded approvingly. It would be more than ninety minutes before any effect could possibly be seen. If the signals from *Neptune I* did break off in a regular pattern, it would show that Whiskers’ message had been received and was being answered. It might then, as his old friend had suggested, be possible to get some information from the ship by using the morse code. Of course it would be a tedious method, having to wait an hour and a half between question and answer. But it would be a wonderful encouragement to them all if they knew that someone was alive aboard the distant ship.

Every few minutes Whiskers repeated his message with slight variations. Once he’d got an acknowledgment, then the whole situation would change. Control would plan how to extract vital information from the crew to see if any help could be given. Meanwhile he must soldier on and wait for any reply with what patience he could muster.

As the ninety-minute interval drew to its close, all other activity in the huge control room came to a halt. The scientists and technicians on duty had been joined by scores of others as news of Whiskers' plan had filtered out. Sir George Benson and his three deputies were there, each pretending to be occupied on some job. In reality their ears were strained to catch the slightest break in the tracking signal.

Ninety minutes had passed—and there was no change in the sound from the loudspeaker. Of course it might have taken a little time for the ship's crew to pick up the message from Whiskers and to put his suggestion into operation. The men and women in the control room waited tensely.

Chapter Eleven

“That should do it,” Tony announced at last. “We’ll let it warm up and then we’ll try it.”

“What about the receiver?” Serge asked. “Will that be all right too?”

“Should be. Wouldn’t be much use talking to Control unless they could talk back, would it?” Tony grinned.

He closed the switches that would send the power flooding through the transmitter and receiver. In a minute or so they would be able to broadcast to Earth. Chris waited impatiently for a signal from Tony. Suddenly an astounding sound crackled out of the loudspeaker.

“—in a regular pattern. Please acknowledge this by three blanks!”

It was the voice of Whiskers! There could be no doubt about it. Their old friend’s well-known tones, distorted by the distance, filled the cabin. It was the first human voice, apart from their own, that the crew had heard since disaster had struck them, and they went a little hysterical with excitement and relief.

“Where’ve you been, you old so-and-so?” Tony almost squeaked, while Serge and Morrey joined in with foolish remarks addressed to the loudspeaker. Even Chris found the emotion of the moment almost unbearable. It was only when he remembered that, if their transmitter was working as well as the receiver, the outburst would be heard in Control, that he managed to command himself and call his friends to order.

When at last they fell silent, they noticed that the loudspeaker was silent too. No voice of Whiskers, but only the crackle of static. The reaction was swift. Surely it wasn’t a case of mass hallucination? But before dismay could

submerge them, common sense told them that Whiskers would be broadcasting only at intervals.

That was it! Control, after picking up their tracking signal, was trying to contact them, and, somehow, Whiskers had been given the job. He must have been trying for some time. The tracking transmitter would have begun to work as soon as the power supply had been restored. If they waited a little, his voice would come through again. Chris took the microphone once more.

“*Neptune I* calling Control,” he said, trying not quite successfully to speak calmly. “We are all alive and well. A serious electrical fault has developed. All systems have been out of action. We have restored power, light and air circulation. Now we’ve just got our radio working. Whiskers old man, your voice is the sweetest thing we’ve heard since we left Earth. Can you tell us where we are and what is the date and time?”

Just as he finished the loudspeaker came on again.

“Control calling *Neptune I*,” Whiskers said. “We’re picking up your tracking signal. Can you acknowledge by interrupting?”

He must have spoken some time before. How long, they had no means of knowing. Once they could exchange messages both ways they would get things sorted out. Meanwhile Whiskers would be repeating his request until their own broadcast burst into Control.

“Perhaps, Tony, you’d better cut the tracking transmitter just in case we’re not getting through,” Chris suggested. “That will make sure they know we’ve heard.”

“O.K.,” Tony answered cheerfully. It was great to know that, somehow, they would now be able to communicate with their friends. Even if they could achieve nothing more, this would be a great comfort to them. And, as Chris had said, they would be able to let Control know what had gone wrong.

Whiskers kept repeating his request, and as time went on

and there was no sign of a response, spirits in that huge room began to sag. The tracking signal continued steadily. Could it be that, in spite of all, the transmitter had come alive on its own and that the ship carried no human occupant? Surely by now the crew would have picked up his broadcast and been able to respond. He must cling to the hope that the cause of the silence was that *Neptune I's* receiver wasn't working. He was about to repeat his message yet again when it happened!

“Listen!”

A startled technician had shouted, and Sir George and the others looked wonderingly towards him. He was working on the receiver that would pick up any voice signals if they came. Someone had reduced the volume of the tracking signal till it was barely audible, and now another sound was filling control. It was a crackling sound from another loudspeaker. As soon as he heard it, Sir George's face went pale with excitement.

“It's their carrier wave!” he burst out. “They're coming through!”

Two score hearts stopped beating. Two score breaths were held. There came from across those millions of miles a babble of sounds, of laughter, of cheers, of semi-hysteria. Human voices. Voices of the crew of *Neptune I*.

“Where've you been, you old so-and-so?” a voice said distinctly.

“Tony!” burst out Sir George and Whiskers together.

In an instant the sedate control room had been transformed. Sober scientists and staid technicians laughed, shouted and danced. It was only the burning desire to hear every precious syllable coming from the radio that brought the celebrations to a swift end.

It was now certain that, beyond all human expectation, Control was in touch with *Neptune I!* And, it seemed, all of

the crew were alive! Whiskers was sure he'd heard the other three voices besides Tony's in the confused sounds that were coming over the loudspeaker.

"Wait till you get back here. I'll give you 'old so-and-so', you young brat," Whiskers called joyfully into the mike. Sir George, striving hard to conquer his emotion, came over and took the microphone.

"Thank God you're alive," were the first words he said. "Your signals ceased and we thought the ship had broken up. No doubt before you hear this you will have told us... Ah, someone's coming through now."

The Director interrupted his broadcast to listen to the first coherent message that the loudspeaker had brought.

"Neptune, calling Control," the voice of Chris Godfrey said, and the silence in that great room became acute. Then Chris could be heard saying that all the crew were alive and well, but that a serious electrical fault had developed. He reported that some repairs had been made and requested information about the date, time and their position.

Whiskers cursed the sloth of radio waves. How can you conduct a conversation when it takes a hundred and fifty minutes to get a reply? But Mr. Gillanders told the crew that the date was April 2nd and that he would give a time check in ten minutes' time.

He also told them that *Neptune I* was bang on target, that it had kept to the original flight path, and that without any alteration they would arrive in the vicinity of Neptune at about the date originally planned. Then he went on to ask about the damage to the electrical system in much greater detail. In particular he wanted to know how badly the automatic hypothermia apparatus was damaged, and whether Tony felt able to make a repair.

Sir George had called another conference of his top men and women. Now they knew something of the situation they could begin to discuss what was to be done. The first priority, of course, was to get the crew back safely. Assuming they

could turn the rocket round and put it on a new course to bring it home, could the crew survive the journey if the A.H.A. wasn't functioning? Was there enough food and other supplies, and how would they react to such a long voyage without the help of frozen sleep?

"I'm afraid we shall have to know much more about the condition of the ship before we can come to any firm conclusions," Dr. Rosenberg declared.

"The deciding factor will be—can they fire the lateral rockets to turn the ship?" Professor Boronoff said quietly. "If they can't, there's no way of bringing them back."

The horror of the situation struck a chill to everyone's heart. It would be terrible if *Neptune I* had to go on and on, carrying its helpless crew with it. Now that they could talk to Chris and his companions the tragedy would be stark and personal. They would be able to hear the voices of the crew until madness or death overtook them.

The long period before the first message came back seemed an eternity to the crew. Chris regretted that he hadn't thought, in the excitement of hearing voices from Earth, to time the interval. It would have given them some indication of their distance from home. Still—Control would have the information and would let them know just as soon as they got through.

"Tony!" the loudspeaker suddenly burst out, and they heard the joyful voices of Whiskers and Sir George.

"Wait till you get back here," the excited voice of Whiskers gurgled. "I'll give you 'old so-and-so', you young brat."

The four crew members performed an elaborate aerial ballet with the sheer joy of hearing the familiar threat from their old friend, but the long wait before they could indulge in the usual banter was almost unbearable. Control would now be getting Chris's carefully modulated messages telling what had happened. Oh, well, they would soon know where they were.

Backwards and forwards the messages passed. Soon Chris learned that their journey to Neptune was just over half-completed. In return he described in more detail the damage they had found after their premature awakening. Of course, Sir George said, it would be impossible to continue the original flight programme, so Control was working on a new one to get them back. Putting on his most “official” voice, the Director notified the astronauts of their recall. Then, speaking in his normal tones, from which he almost succeeded in eliminating any note of anxiety, he called for a report on the lateral rockets.

The crew knew that unless the ship could be turned round through a hundred and eighty degrees, they would never be able to return to Earth. As yet they hadn’t had time to check the small rockets that ringed the ship. They had been too preoccupied with ensuring the basic conditions for survival. Now they must find out if the electrical firing system had been damaged along with the other installations.

Twenty-four in number, the lateral rockets were arranged in pairs circling the ship. From outside the ship the nozzles looked like twelve pairs of nostrils. Each could snort out fire that would nudge the ship away in the opposite direction. A controlled burst from any of the twenty-four rockets could turn *Neptune I* right over. Surely some of them would fire!

There was no doubt about it. The crew had abandoned the pretence of not caring. Even Chris had been unable to suppress the rising tide of hope that had welled up even stronger with each success. Now that they could speak directly with their friends on Earth they firmly believed that something could be done. Even if it was impossible to complete the Neptune mission, they couldn’t help feeling confident that Sir George Benson would bring them safely home. It was the most dangerous mistake they could make.

The lively hope and high spirits of the crew came over plainly in their radio messages. As he listened to the slightly distorted voices of his young friends, Sir George winced at

the talk of what they would do when they got back. Whiskers had answered in the same style, for the Director couldn't bring himself to extinguish their growing flame of hope. The computer was standing by ready to work out the ship's return route as soon as Control knew about the laterals. But not even the computer could stretch out the crew's inadequate supply of food and water. Nor could it guard against the tremendous mental strain of such a long journey.

Up to now Control had not requested information about *Neptune I's* stores. Because most of the journey both there and back would have been completed without need for the crew to eat or drink, the provisions that the ship carried were limited. Even with the emergency rations the crew wouldn't be able to survive the long months ahead if they were to remain conscious. They must realise that as soon as their present mood of exhilaration had passed and they were asked for this vital piece of information.

"Come on, let's check the laterals," Chris called to his crew. The sooner they turned the ship around the sooner they could begin the process of deceleration. He wouldn't let himself think how long it would take, for he was determined to meet one obstacle at a time. When he reflected on the change in the situation since they had first been defrosted, he felt confident that, under Tony's skilled guidance, they could repair any damage within reason. Even if the side rockets didn't function at once, surely it couldn't be a very hard job to get them to work.

With a will they set about making the crucial tests. The twenty-four firing buttons were on a panel about eighteen inches square and within easy reach of Chris's contour couch. They were placed there in case it was ever necessary to make a course correction while the ship was under thrust. Chris would then only have had to raise an arm to reach the firing panel.

Now *Neptune I* was under free fall, coasting along at a fantastic speed ever further away from Earth. Holding his

couch with one hand to steady himself, Chris pressed two of the firing buttons. These controlled rockets on opposite sides of the ship, which would counteract each other. Otherwise the vessel would start spinning like a top if only one of the pair fired. Just a short burst would be sufficient until Control could give them definite instructions.

Nothing happened. No tiny red lights flashed on beneath the buttons which would have indicated ignition. There was no tremor of the ship, as there should have been. This pair of rockets was out of action. One after another, Chris tried every button on the panel. Not a single rocket lit up. Unless they could find and correct the faults, they would shoot on for ever across space and all their efforts would have been useless.

Chapter Twelve

“What about a press release?” Mr. Gillanders asked Sir George Benson.

“Not yet,” the Director replied firmly. “The world believes that our astronauts have perished. Until we are sure we can get them back it would only cause great distress to announce that they are still alive. We’ll let the news services know as soon as we can.”

But even while the Director was speaking a leak was sprung. One of the technicians who’d been on duty continuously for over thirty-six hours, had collapsed and been sent home. He was so exhausted that when his wife questioned him he told her the secret that Sir George had charged them all to keep. An hour later the good lady had a hairdressing appointment, and so the secret was out.

It was a furious Sir George Benson who saw the hordes of reporters bearing down upon him. Someone was going to feel the edge of his tongue for the blatant disobedience. When he told his staff to be discreet, he expected them to be so. Now he would have to let the world know that Chris and his companions were still alive.

There wasn’t time to prepare a formal statement. As soon as the newsmen had been ushered into the press conference room, the Director stepped in front of them and in a few terse sentences explained how contact had been reestablished with the crew of *Neptune I*. He went on to say that the ship had been badly damaged by an electrical fault, and it wasn’t at all certain that it would be able to complete its mission. The whole staff at Cape Kennedy were working on the problem. Until a decision had been reached he could say no more. Before the torrent of questions could break, Sir George quickly walked away, leaving a tight-lipped Mr. Gillanders to urge the reporters on their way.

“You didn’t tell them that the crew may never be able to return at all,” Whiskers said.

“No,” the Director agreed wearily, “because nothing is certain yet. We want to work without the emotional storms that would be set up if the public was told that our young friends were doomed.”

“But if—if we can’t get *Neptune I* home, you’ll tell them then?”

“I expect so. Meanwhile let them rejoice that the four young men are still alive.”

And rejoice the world did! The whole apparatus of news dissemination swung into action to broadcast the deliriously exciting news that the four young heroes, whom everyone had mourned as lost, were still alive! It is doubtful whether there was a single man, woman or child in the whole civilized world who didn’t hear that Chris, Tony, Morrey and Serge had not perished in the spaceship disaster.

When the deaths of the four young men had been reported so many weeks before, everyone had mourned their loss, for they had long been heroes to millions. The destruction of *Neptune I* and its crew had felt like a personal disaster. Now, it seemed, the astronauts had returned from the dead! The world waited for more news.

Only the most severe measures protected Sir George Benson and his staff from the persistent reporters. Nothing but rigid security all round the Control Centre building could have allowed the scientists and engineers to continue their work. Everyone was waiting for news of those lateral rockets.

“It’s no use,” Chris said at last. “They’re all dead.”

After their growing confidence, this failure was a most bitter blow to the astronauts. Utter despair filled the cabin.

It seemed a long time before Chris managed to speak.

“We’d better report to Control,” he said in a strangled

whisper.

But it was still some moments before they felt calm enough to speak to their friends on Earth. Then Chris told the Cape, quite simply, that none of the lateral rockets would work, but they would start investigating. He didn't ask for further instructions, for he knew there was little that Sir George could say.

Gradually the training of the astronauts asserted itself. Even if they had no possible hope they must act as if they had. They must attempt the truly formidable—perhaps impossible—task of repairing the laterals. They would probably have the remainder of their lives in which to do it. And that would depend upon how long their food lasted.

Cold horror gripped everyone in Control as Chris's words came over the loudspeaker.

"Now you see why I didn't want any publicity," Sir George Benson groaned.

Whiskers, who'd known him for more years than he cared to remember, had never seen his old friend in such deep depression. It seemed that the fluctuations between despair and hope had taken their toll. After the satisfaction of a perfect launch, then the shock of *Neptune I's* apparent destruction, followed by the incredible news that Chris and his friends were well, the latest turn of events was more than the Director could bear. Tough and experienced as he was, Sir George felt utterly devastated. His long and distinguished career seemed to have collapsed in ruins. He would now have to listen to his young friends' despairing voices as they were carried to the far reaches of space.

What were the prospects that the small rockets could be repaired? The Director believed that, good as he was, Tony wouldn't be able to do the job. It was far too complicated.

The intricate wiring and timing apparatus would require specialised attention. When any fault had developed during

ground testing, he'd always insisted on a replacement from the factory. *Neptune I* carried no spares.

Nevertheless, Sir George called together his experts to discuss whether there was any possible help they could give. The unanimous opinion was that it was hopeless.

There was only one way in which the ship might be brought back to Earth. It must complete its journey towards the massive planet towards which it was speeding. Then it might be able to use the powerful gravity of Neptune to swing round it and head back. But this would mean that the ship still had many months of flight before it. Without the help of the A.H.A. the crew wouldn't last. But if Tony could patch up the hypothermia apparatus.

Sir George braced himself to speak to the doomed crew. He was sure that Chris and his friends would be as aware as he was of the situation. Chris must have known that their end was certain when he reported about the lateral rockets. Yet his voice had been calm enough. Sir George must follow his young friend's brave example and speak without the emotion he felt.

"Bad news about the laterals. I'd like you to concentrate on the A.H.A." he said. "Will you examine carefully and let us know if you can repair?"

If the hypothermia apparatus, too, was damaged beyond repair, then even the remote chance of bringing the ship back after a semi-orbit of Neptune would have vanished. And if that happened would it not be better to break off contact with the doomed crew? Would it be kinder to let the astronauts end their days in privacy? Or should they keep in contact right to the end? Benson didn't think he could stand that.

To find his staff a task the Director ordered that a flight programme should be worked out on the assumption that *Neptune I* could complete its journey. It might even be possible to bring the ship back without much help from its crew. But if they had already perished, what would be the

use?

After Chris had broadcast his message to Control the quartet could easily have relapsed into the blackest gloom. The long interval before the Cape could reply would have been sufficient for their morale to break down entirely. But Chris was having none of this. He ordered them to begin repairing the lateral rockets.

Every member of the crew knew full well that the job was impossible, but—as much to occupy his own mind as to encourage his companions—everyone set to work with forced enthusiasm. Tony began stripping away the panelling to expose the mass of wiring and pipes that led to the first rocket.

A depressing sight met their eyes. Not only had the great surge of current that had been responsible for so much damage throughout the ship scorched the cables, but the heat had twisted and distorted most of the pipes. Tony could hardly suppress a groan, for he more than his companions appreciated the impossibility of the task.

“Let’s try the others,” he said tersely.

One by one they exposed the sad sight of the ruined laterals. Each was like the first—beyond repair with the resources they had. It was just as they’d looked at the twelfth that the radio crackled. A voice warned them that Sir George was about to speak.

Had they not known him so well, Chris and the others would have thought that the Director was unaffected by the news of their plight, but though he seemed to pass off the condition of the side rockets as just “bad news”, they knew how he must be feeling. Then he went on to suggest a careful examination of the A.H.A.

Was this just a ruse to find them something more to do? It probably was, but Chris led the way to the apparatus. First they climbed up into the “fridge” above the cabin. An

examination of the four speed special hypothermia couches revealed surprisingly little damage. Tony was able to say he could repair them fairly easily. Then they returned to the cabin to look at the programmer—the brains of the apparatus.

Here was the real seat of the damage. As soon as they had removed the cover the usual depressing sight of tangled and scorched wires met them.

“It’s no use,” sighed Morrey. “We could never sort that lot out in a lifetime.”

“I’m not so sure,” said Tony, who’d been looking more closely than the rest. “Two of the circuits are better than the others. It might just be possible to patch those up.”

What he meant was that, of the four separate circuits controlling the four hypothermia couches, two could perhaps be made to work again.

“I’ll report while you make a start,” Chris said quietly. He was fully alive to the appalling situation that would arise if two hypothermia couches could work and two could not. How could one choose among these four close friends?

“Is it good news or bad?” Whiskers asked Sir George.

He and Billy Gillanders, together with Dr. Rosenberg and Professor Boronoff, were with the Director when a message was brought in to the office where they were gathered. The loudspeaker, which would have brought Chris’s voice to them, had been switched off, for they found it impossible to concentrate while waiting tensely for every word that came over the radio. At the moment they needed their utmost powers of concentration, for a fateful decision had to be made.

Sir George Benson passed the message round silently. It was a typescript of Chris’s report that, on a preliminary examination, it might be possible to restore two of the hypothermia couches to working order. The crew were

starting the task immediately.

The men gathered in the Director's office realised in a flash the full implication of Chris's words. It was bad enough having to decide on whether to subject the ship to the terrible hazards of completing its journey. Without this added complication that only two of the crew could survive it.

Sir George Benson wasn't the only one to feel the agony of the moment. Even Professor Boronoff, the stolid Russian, was tormented by the decision that must be made. Everyone would agree that if it was possible to get only two astronauts back alive they must do it. But which two? The Professor, naturally, would have liked Serge, his compatriot, to have been one of the pair. But national identities were no longer important in Man's united effort to conquer space. Time was when he would have insisted that the citizen of the Soviet Union should have been one of the fortunate couple. Now it mattered only that the decision must be in the best interests of the human race as a whole.

Even as Whiskers and the scientists were realising the full implications of the situation, the crew of *Neptune I* had started on their task. Fortunately not only Tony, but Serge also, understood the mechanism of the A.H.A. While Chris worked under Tony's direction, Morrey put himself under Serge's orders. Between them they stripped down the four circuits and exposed the full extent of the damage. Many hours passed before the job was done, but before they broke off to get some sleep Chris was able to report to Control that it was possible to make some repairs.

As he lay strapped to his couch Chris, exhausted in body, found that his mind just wouldn't rest. He could, of course, have taken a sleeping pill, but he hated doing this, so he let his mind roam wherever it willed, for he'd often found that he got to sleep more quickly this way.

However, his mind kept coming back to one subject. Who

should survive if only two of the hypothermia couches could be made to work? With the problem still unresolved he fell asleep.

Chapter Thirteen

When they had had some sleep, the crew inspected the hypothermia couches again, and it was clear that Tony's first assessment was pretty accurate. Now that they had had time to examine closely each of the four sets of wiring they could see how extensive the damage was, but Tony explained how two couches could be made operational by replacing damaged parts in one circuit with undamaged parts from another. "Cannibalism" was the term he used.

By common consent the quartet turned away from the hypothermia chamber when they had finished their examination. They floated into their cabin and silently took some refreshment.

"Well, that's that," Morrey said at last. "We can't repair the couches."

"Correction," Tony insisted. "We can repair two, and the other two of them are hopeless."

"That's what I mean," Morrey declared. "It's useless if we can only half do the job. What good will two couches be? I thought there were four of us."

Chris knew that he couldn't keep silent any longer. As leader of the crew, he must decide the action to be taken before any disagreement could break out. He knew what he wanted to do.

"We are going to get those two couches working," he declared grimly, "and I don't want any argument about it."

It wasn't very often that Chris used his authority as crew leader to enforce his will. Usually all that was necessary was to express an opinion. The crew were so accustomed to working together that usually they thought and acted as one man. And he knew precisely what his three companions were thinking now. Yet he must insist that his decision prevailed.

Morrey, Tony and Serge looked at Chris in astonishment. Could he really believe that two of them would be willing to survive if the other two couldn't? For that was plainly the situation. Whatever Control decided, a long journey was involved, far too long to endure without the relief of hypothermia. If they repaired the two couches two of them could be saved, and two of them would die. Better not to do the repair at all.

Why did Sir George want the couches repaired anyway? If *Neptune I* was doomed to go careering for ever through space, why let two members of the crew live almost indefinitely? With energy from the almost inexhaustible atomic motor, the A.H.A. could possibly function for centuries. But who would want to wake up, eons later, with nowhere to go and with one's friends just a cloud of dust floating over the cabin's atmosphere?

"Control calling *Neptune I*. We are working on a flight programme that will use the gravity of the planet to turn you back to an Earth trajectory. Send a detailed report of all stores. Over."

So Control had decided there was a possibility of getting the ship back to Earth! Or was the order just to keep up their spirits? This seemed unlikely, for the deception could be kept up only for a limited time, and Sir George must have known that they would see through it. Control must be working on a definite plan, so it was important to make up their minds what to do about the couches.

"I don't know what they have in mind," Chris began, "but there can only be one reason why Control want to know about the A.H.A. and a list of stores. Now if I'm right and they can get the ship back, two of us can use the couches and two can't. But let there be no mistake about it. If *Neptune I* can get back, two of us must get back with it."

There was a silence in the cabin. Then Morrey spoke. "And the other two?" he asked.

For the first time in his life—or almost the first—Chris lost

his temper with his three friends.

“What the blazes do you mean?” he stormed. “What does it matter which two get back? The important thing is that two of us should—if we can. Don’t we *I won’t be one to use a couch.*”

Morrey’s face flushed.

“You know darned well I wasn’t thinking of myself. But if you’re not going back, that solves it. Neither am I. Tony and Serge will make the journey.”

“Not so fast,” Serge said quietly. He was the least agitated of the four. “As leader it is your duty to return with your ship, Chris. I shall, of course, join Morrey.”

Tony, surprisingly, said nothing.

“Let’s get the couches working first. We can argue afterwards,” Chris snapped.

For a moment he thought he was going to have a mutiny on his hands, but Tony broke the tension by quietly starting work. The others followed, and soon they were all busily occupied.

While his three crewmen toiled on the A.H.A., Chris began to make an inventory of their remaining stores. Though he’d had to speak sharply to his friends, his heart warmed towards them. Both Serge and Morrey would, he knew, have given up a couch for him. Of course he couldn’t allow that, but he appreciated their friendship. It was strange that Tony had kept silent.

“We can do it,” Sir George Benson announced to his colleagues. He straightened up from bending over the table littered with a mass of papers. The final results had just come in from the computer and a flight programme had been worked out for the return of *Neptune I*.

“How long will it take?” Whiskers asked. He knew how much depended upon the answer.

“Two hundred and forty-one days from now,” Sir George replied briefly. It sounded a very long time.

How long would food last aboard the distant ship? Certainly not two hundred and forty days, nor yet half of that time. Until the stock list had been received, the dieticians couldn't start to calculate the maximum time that life could be supported. Unless all four of the hypothermia couches could work, some of the crew must be sacrificed. Benson felt cold at the thought of who would have to make the decision.

Well, they could always draw lots to decide who should live and who should die. The crew could do it themselves, or perhaps he'd better do it for them. He wondered what they were thinking, so many millions of miles away. And what effect it would have upon them when it became quite clear that only two of them could be brought safely back home?

Chris, as the leader of the crew, would be a most valuable member to get back alive. Perhaps he would be able to give a clue as to what went wrong. Tony, of course, would also know a great deal about the damage to the ship. But then so would Serge and Morrey. It was going to be a ghastly job making a decision. Several times in the past Sir George had had to decide whether or not to risk the lives of the whole crew. Often he'd blamed himself for exposing them all to such frightful risks. But then they had all been involved. Now two only must be selected to live.

The radio was at work. It was Chris's voice reciting in unemotional tones the sum total of the stores they had left. When he'd finished there were some very grave faces in Control. The dieticians shook their heads in dismay. Then they began to add up the calories to find how long, on the most meagre rations, life could be supported. When they had completed their calculations they handed over to the Director the depressing results.

There was barely enough food in *Neptune I* to keep one member of the crew alive for two hundred days—or two of them for one hundred days. And the journey for the pair who

didn't have hypothermia would last two hundred and forty-one days!

The repairs to the A.H.A. and to the special couches were going well. Under Tony's overall direction damaged parts were removed from two of the circuits. It so happened that the couches which could be repaired had carried Tony and Serge on the first part of the journey. But though each couch was built to suit each individual member of the crew, this meant nothing under the present circumstances. Because the couches belonged to Tony and Serge, this didn't mean that—automatically—these two would be the lucky ones. Or did it?

As they worked Chris found the problem pressing on him more and more. In a few hours the job would be done and then the choice would have to be made. It would have been so much easier for him if three of the couches could have been made to work. There wouldn't be any problem then, he told himself. He wondered if either Morrey or Serge had had the same idea. From what they had said he thought it very possible. He must be careful to see that they didn't forestall him.

Tony was rather different. When Morrey and Serge had offered to give up their claim to a couch, Tony had remained silent. Of course he was the youngest, but in the past he'd been as courageous and self-sacrificing as any of them. Not that Chris could have accepted his offer, but it would have been good to hear that Tony hadn't lost his spirit. Perhaps all the hard work and the terrible uncertainty about the future were having their effect.

“What are you going to do?” Whiskers asked Sir George.

It was now plain that *Neptune I* could be brought back to Earth by completing its flight round the planet. But only two of the crew could have hypothermia. No matter how the rations for the other two were reduced, even if they stood the utter loneliness and mental stress of the journey, they would

starve to death.

“I’m going to tell them frankly what the position is,” Sir George said firmly. “Then I shall ask them if they wish to decide for themselves who will survive, or if they wish me to do it.”

“And if they want you to choose?”

“Then I’ll do it,” the Director answered. Even the thought of this made him feel sick. Yet if necessary he would accept this crushing responsibility.

Whiskers couldn’t bring himself to press his old friend further. Sir George steeled himself for the task and asked for the microphone.

“Control calling *Neptune I*,” he said.

“So we are going round Neptune after all,” Tony remarked after Sir George’s voice had died away and the message had been formally acknowledged by Chris. “At least—some of us are.”

The others didn’t answer him. Since Tony hadn’t volunteered to be one of the casualties, they assumed that he felt he ought to be one of the two survivors. He might well have been so, but at least he should be prepared to take his chance. It was very unlike him to be unwilling, but perhaps his nerve was failing him now that death for two of them was inevitable.

Meanwhile Chris was thinking the situation over carefully. His mind was quite made up that he wouldn’t be one of the survivors. No matter what arguments his friends used, nothing would move him. At the right moment he would bid them farewell and step through the airlock out into space. But who would accompany him?

He guessed that both Morrey and Serge would claim the right to make the sacrifice along with their leader. If Tony wanted to return to Earth, then the choice he’d have to make

would be between the two volunteers. Morrey—or Serge? They would get the two couches operational first and then the matter must be settled. So the work went on, and Tony noticed the coolness towards him. It didn't upset him, for inwardly he was chuckling to himself.

“How much more work is there?” Chris asked Tony coolly.

“About another two hours should see it through,” Tony answered, “and that's mainly soldering connections.”

“Right. Then we'll turn in,” Chris decided.

He and his crew were very tired, but he really wanted an excuse to do some more thinking. It wasn't going to be easy, for both Morrey and Serge would be valuable survivors. Both were equally close friends. Both had been through many dangers with him and the bond between all three was equally strong. No, it wasn't going to be easy. He drifted off into an uneasy sleep.

Chris awoke some six hours later. He remained still for a few minutes on his contour couch before attempting to release his straps. He could hear the regular breathing of his companions, one of whom he would soon have to condemn to death. The problem of “who?” had still not been solved, and he lay there turning it over in his mind.

A vague uneasiness crept over Chris. Something was wrong, but he couldn't say what it was. The feeling had gradually made itself felt as he wrestled with his tremendous problem; and at last he had to pay attention to it. Loosening one of his straps, he heaved himself up on his couch and looked around the cabin. The light revealed Serge and Morrey still asleep and breathing regularly. But Tony's couch was empty! So it must have been because he had become aware, subconsciously, of Tony's absence that he'd felt a little disquiet.

No doubt Tony had awoken early and if he was so keen to get back to Earth he'd probably resumed work on the hypo couches up above. But Chris couldn't hear him, and after a few seconds he thought this strange. Without wakening his

two companions he loosened the other straps and floated off his couch.

A push propelled him towards the hatch into the hypothermia cabin. He eased himself through and looked around. No Tony! After a thorough search of the “fridge”, Chris went back into the main cabin and searched that too. Still no Tony. Then he must be somewhere among the fuel tanks. But why?

Still reluctant to awaken Morrey and Serge, Chris climbed through the opening that led down to the vast tanks of oxygen and hydrogen. It took him a full ten minutes to squeeze all around the narrow corridors. At the end he was convinced that Tony wasn't there either.

“Serge! Morrey! Tony's missing,” Chris called as he returned to the main cabin.

The other two were soon awake and Chris told them what had happened.

“Perhaps he's ill somewhere,” Morrey suggested.

They made a thorough search of the ship. It was Chris himself who found the clue. He opened the locker where the space-suits were stored. There was one missing. Tony's!

Chapter Fourteen

So, after all, Tony hadn't selfishly wanted to get back to Earth. He'd deliberately waited until the repair job was nearly done. Then, without saying a word to anyone, he waited for them to fall asleep before putting on his suit and slipping quietly through the airlock. Far from wanting to claim one of the two hypothermia couches in working order, he had deliberately sacrificed himself to make Chris's task easier.

As his companions realized how much they had misjudged Tony, a feeling of guilt flooded over them. They didn't dare to mention this to each other, though each knew the others were feeling the same.

"We've got to get him back," Chris said hoarsely. "I wonder how long he's been gone?"

"No means of telling," mumbled Morrey, "and the radar isn't working, so we can't pick him up that way."

"He may be floating alongside the ship," Serge pointed out. "Unless he used his air gun to blast himself away."

"That's a possibility," agreed Chris. Though Tony's disappearance had anticipated what Chris himself planned to do, and though it had solved the leader's dilemma, he couldn't accept this easy way out. If only for his heroism, Tony must be brought back and given his chance.

"I'll go outside to see if he's nearby," Chris said thoughtfully.

Morrey and Serge exchanged a quick glance. It would be easy for Chris to follow Tony's example and leave them in sole possession of the ship. That would give them both a reasonable chance of getting home alive. Perhaps that was what Chris intended.

"Oh no, you don't," Morrey said quickly, "at least not

alone. Serge and I will come too.”

In spite of their leader’s orders, threats, entreaties and promises, the two astronauts were adamant. If anyone went after Tony, they’d all go.

“You don’t trust me, do you?” asked Chris bitterly.

“No, we don’t,” Serge and Morrey answered in unison.

Yet Chris couldn’t find it in his heart to condemn them. He would have done exactly the same if their positions had been reversed.

“All right,” he said at last, “let’s all go and look for him.”

Tony had closed the inner door of the airlock very quietly. He was sure he hadn’t aroused any of his friends. Swiftly he opened the outer door and gazed into the black, star-spangled space.

“Goodbye, and good luck, fellows,” he breathed.

It was a silent farewell, for he wasn’t using the helmet radio. The pain that filled his heart wasn’t fear, he was sure. It was grief at leaving his companions for ever, even though he knew that what he was doing would let one of them live in his place. With a sob—for no one could hear—he pushed himself slightly away from the side of the ship as the airlock door swung to.

He dropped his hand to his belt and realized he hadn’t a jet gun. No matter. He would drift slowly away from *Neptune I*. Meanwhile it would be a comfort to float effortlessly in its company. How long his oxygen supply would last he had no idea. He wouldn’t think about it. Instead he’d just relax as if he were on a bed softer than any earth-bound man could know. He’d try to empty his mind of all thought and wait for gentle oblivion to come creeping over him.

Chris, Serge and Morrey stepped out into space. *Neptune I* seemed to be hanging motionless, one side in black shadow

and the other brilliantly illuminated by the distant dazzling Sun. All around were clusters and clouds of innumerable pinpoints of light, several of them much brighter and larger than the rest. These were the planets, and one of the smallest would be Earth. But the astronauts were not interested at that moment in the awesome scene around them. They were looking for a source of light that was neither star or planet, but a very brave young man who was intent on making a sacrifice none of them could accept.

“There he is,” Morrey yelled over the radio, and about a mile from the ship they saw, through the utter clarity of empty space, the illuminated figure of Tony. He was floating along parallel to *Neptune I*, within easy reach with the aid of their jet guns. They sped towards him.

Try as he would, Tony couldn't quite empty his mind. Pictures of the three friends who had meant so much to him, kept coming back. Memories of Sir George Benson, of dear old Whiskers and Mr. Gillanders, forced their way into his thoughts. He sighed deeply and closed his eyes, trying to forget.

Suddenly he felt something. A hand had grabbed him, and then another and another. He opened his eyes to see his three companions all holding on to him. His feelings were completely confused. Joy at seeing his friends was mixed with chagrin that they had discovered him so soon and the heavy knowledge that they were all back to square one. The arguments would start all over again.

Tony knew it was no use trying to shake off the hold of his friends. Neither could he escape without his jet gun, for he could see they had theirs. Chris was gesturing to him, for by now they knew his radio was not working. One by one they passed through the airlock into the cabin which Tony had thought never to see again.

For a time the four astronauts were busy removing their space-suits, but after a while these were packed away in the

locker and they had to face each other. Everyone waited for Chris to speak, and Chris just didn't know what to say.

"Tony," he croaked at last, "we—we know what you were doing. I'd decided to do the same but you beat me to it. I gather Morrey and Serge had each a similar plan. Now if we'd all carried out our decision there would have been no one left on the ship—and what would have been the good of that?"

Tony was about to launch into an impassioned plea to be allowed to be sacrificed, for he believed he was the least valuable member of the crew, but Chris forestalled him.

"This thing has got to be talked out together," he said quickly. "We all know what the position is. Two of us can survive, two cannot. I'm sure we'd all be prepared to take a one-way walk into space but we must decide rationally who's to do it."

"Have you thought, Chris, how the two survivors will feel?" Serge asked quietly. "I don't want to be one of them."

"Nor me," Morrey burst out. "I couldn't face life with that on my mind."

Chris swallowed hard. He looked intently at his three great friends.

"Are you saying," he said quietly, "that because we can't all live, all four of us should slip through the airlock together?"

"Yes!"

Chris was startled at the vehemence and unanimity of his friends' reply.

"But it's the duty of some of us to return," he protested. "A report must be made to Control."

"What could be said that we can't send over the radio?" Morrey asked pointedly.

"But the ship—it must return to Earth for examination."

"If the manoeuvre worked out by the Cape doesn't come

off, the ship won't get back. If it does, Control can bring in the ship without our help," Serge reminded his leader.

"We've always been together," Tony insisted, "and we must be together to the end. Let's step out with arms linked and keep it that way."

"Let me think. Let me think," Chris said desperately.

The flight programme that had been worked out for *Neptune I* was a risky one. Because the ship's lateral rockets were out of action, it couldn't be turned to order. The scientists at Cape Kennedy were staking everything on the gamble that, because the rear end of the ship with its atomic reactor was more massive than the rest, the planet's gravity would turn it. They believed that if this happened soon enough, the ship could be decelerated considerably. However, it would still be travelling far more rapidly than had been planned, so it would have to approach the planet's surface very closely. The margin for error was very small indeed, but it was the only chance.

At one time Sir George seriously considered ordering the astronauts to try to turn their ship by using their small jet guns, but he had to reject this idea because of lack of control. It would be a million to one chance against *Neptune I* being positioned accurately. More likely it would be set spinning helplessly, and all possibility of its being set on a course back to Earth would have vanished. No, it would have to be the close planetary approach or nothing.

But now that was settled, his thoughts inevitably reverted to the greatest problem of all—the crew. Would he have to make the terrible choice or would they decide themselves? The matter could be postponed no longer. He would call *Neptune I* and make his offer.

"Tony," Chris asked, "can the A.H.A. be operated manually?"

“Yes,” Tony answered wonderingly, “but someone would have to be responsible for setting it going.”

“That’s just it!” Chris exclaimed. “Anyone conscious in the cabin could switch the A.H.A. on and off.”

“What’s on your mind, Chris?” Morrey asked.

“It’s just a mad idea that we might keep together for some time yet,” Chris replied. “If we took it in turns—two by two—to use the couches, we’d last a lot longer.”

“But what would be the use?” asked Serge. “We still couldn’t last out.”

“I know that, fathead,” Chris answered, “but it’s the only alternative to all stepping out of the ship now if we want to keep together.”

“We could try it,” said Tony. “I can rig up the A.H.A. for working by hand. You’re suggesting that two of us get frozen while the other two keep conscious?”

“Yes, and when the conscious pair can stick it no longer, they de-frost the other two and take their places?” enquired Serge.

“That’s it in a nutshell. This could go on until all the food has gone, then we could all fade out together. What do you say, fellows?”

“For myself, I don’t mind what we do—if we all do it,” Morrey answered. “But what’s to stop the pair that remain conscious from sneaking out of the ship while the other two are all frosted-up?”

“There’d be nothing to stop them—except a promise to the others,” answered Chris. “If we promised each other, we’d play it straight, I’m sure.”

“You don’t think that the desire of one of us to sacrifice himself for the others would be an absolution for breaking such a promise?” Serge asked quietly.

“No, I don’t. If we give our word to each other, that’s more

binding than anything,” Chris said. “But we can easily counter that. We’d all give an undertaking that if any pair of us woke up to find the other two had broken their solemn pledge, then the survivors, too, would step out into space.”

“So it would be useless hopping out while two of us were in the fridge,” declared Morrey. “It would be a wasted gesture.”

“It would. And what’s more, the two of us left behind would know about that broken pledge,” Chris pointed out. “So what about it, fellows?”

One by one the crew all agreed to try out Chris’s scheme. True, it only put off the inevitable end, but at least it would prolong till the last possible moment their time together.

Once the decision had been taken and the pledges given, they began to plan the operation with enthusiasm. While Chris was informing Control of what they were about to do, Tony was making certain adjustments to the automatic hypothermia apparatus. He rigged up a switch so that it could be made to freeze or de-frost at will. Then he demonstrated it to all his companions.

“Chris, shall we gobble our food up or shall we make it last as long as possible?” he asked.

“We’ll spin it out,” the leader answered firmly. “I thought the whole idea of the scheme was to hang on together for as long as we can. You’ll have to curb your appetite, my friend.”

“All right—as long as we know,” sighed Tony. “Are we going to work out a programme?”

Chris nodded, and the quartet spent an interesting time drawing up a rota. They decided that, to lessen the monotony for the two who were conscious, there should be a constant change of companion. As to their food, they would try one small meal in each twenty-four hours. The pair under hypothermia wouldn’t, of course, need to eat during their spell.

There would be one change from this routine. All four

astronauts would observe their circuit round the planet. If there had been an error in Control's calculation, they would plunge into Neptune together. If not, they would resume their routine while the ship sped back towards Earth. At last, when they all felt too weak to carry on, they would settle down for the last time on their contour couches and wait for life to slip away from them one by one.

Tony and Morrey were selected to be the first pair to be frozen. Chris and Serge saw them safely on the two repaired hypothermia couches. Then they went back to the main cabin and Chris set the A.H.A. in motion.

"It's only putting off the inevitable," Sir George Benson sighed after he'd received Chris's message. "I'm not surprised that they refuse to be separated. At least, I don't have that dreadful decision to make."

"I should like to have seen just two of them again," Whiskers said sadly.

"Well, we will get a verbal description of Neptune," Professor Boronoff said practically. "That is more than we expected."

"Hang Neptune!" Sir George burst out. "I'd rather have had those four lads back than learn a thing about the wretched planet."

Chapter Fifteen

The spaceship was approaching the planet after which it had been named. In one sense it was nearing the end of a journey on which it had set out so hopefully many months before. But disaster had struck, and now *Neptune I* was limping along with a doomed crew who would die before the vessel got back to Earth.

Inside the main cabin Serge and Chris lay quietly on their contour couches. Only an occasional word would pass between them, for movement or speech consumed energy, and they had decided to conserve it as long as possible. Up above Tony and Morrey were in the “fridge”, and in another six hours it would be time to de-frost Tony and for Serge to take his place. Ever since they had decided to hang on to life for as long as they could, the crew had faithfully carried out the routine they had agreed on. At regular intervals there was a change of companions so that all shared equally in the tedious vigils of consciousness, and the swift oblivion of hypothermia.

The consumption of food had been cut to a bare minimum. At first the crewman who had just been aroused would have a moderate meal and would then only touch food once every twenty-four hours until it was his turn to be frosted again. But now, perhaps because of their growing weakness, they did not bother about eating when they began their spell of consciousness. Sometimes it was an effort to eat at all, but some food was necessary so that the duty pair would have enough strength to leave their couches to broadcast a routine message to the Cape and to operate the A.H.A.

Chris and Serge were much thinner than they had been some weeks ago. The crew’s calory intake was much below the level required to sustain life at a normal level. Gradually their bodies were consuming reserves of fat to augment that

supplied by food. Because the change had begun gradually, they hadn't noticed it much at first. But now when one of them was aroused from hypothermia he would see the difference in the companions he seemed to have left but a few moments before.

Control kept up a stream of anxious enquiries about them, and they always assured Sir George and his colleagues that they were all well, but even across all those millions of miles the growing weakness of their voices betrayed the truth.

Serge's eyes strayed constantly towards the chronometer that was ticking their lives away. Only a very short time now before he had the precious oblivion of hypothermia. As time had passed the crew found themselves yearning more and more for their time to climb up into the "fridge". Although each spell in the deep freeze passed in a flash, it was a welcome change from lying for hour after hour in the main cabin.

"Control calling *Neptune I*," Mr. Gillanders' voice suddenly came from the loudspeaker. "We shall be igniting the chemical rocket in one hundred and twenty minutes from now."

It was nearly a minute before Chris had grasped the full significance of the message. With increasing weakness he knew his brain was working more slowly. The message was repeated several times, for Control guessed what was happening.

"We must be near Neptune! We must have turned round!" he exclaimed hoarsely to Serge.

For many days they hadn't made any external observations, and with none of their instruments working they had no idea how close they were to the giant planet. Neither had they noticed the slow turn of the spaceship which was caused by Neptune's gravity, just as Control had predicted. So it seemed that they would soon be decelerating and going into a close orbit round the huge mysterious world.

In spite of his exhaustion, Chris felt a surge of excitement passing through him. They would be the first human beings to see Neptune closely. Perhaps they would learn the answers to mysteries which had puzzled astronomers since the planet was discovered in 1846.

Painfully Chris and Serge dragged themselves to an observation port. At first they could see nothing, but turning the lens revealed the vast white planet below them. The ship was positioned so that the chemical motor with its powerful thrust would slow down their headlong rush towards the vast icy world. As they looked at it, Neptune appeared to be an almost perfect sphere, and although it was so far from the Sun the frozen methane particles of its atmosphere made it almost glisten. Strangely enough the polar regions looked darker than the equatorial belt. No surface features could be seen from that distance.

After a time Chris and Serge walked back to their couches. It was not until he had nearly reached his that Chris made an amazing discovery. He was actually walking on the cabin floor and not floating.

“Serge,” he called in wonder, “do you realise the atomic motor is running? We’re already slowing down.”

The Russian hadn’t noticed the gentle gravity induced by the steady thrust of the ion drive. For a time the two astronauts speculated how long ago this might have happened and why they hadn’t noticed it before. Neither could remember, for they knew that their minds were not working clearly in their weakened condition. Control must have switched on the moment the ship was in the correct position. Already for hours, perhaps for many days, *Neptune I* had been slowing down, ready for the critical encounter with the giant planet after which it was named.

“Shall we warm-up Morrey and Tony?” asked Serge.

“No, let them be. We’ll de-frost them as we get into orbit,” Chris answered.

Actually he had no wish to awaken his friends until he was

sure that they were not going to crash into the planet. If Control had miscalculated, there was no point in arousing the other two to share the agony of the last headlong rush. Chris remembered his briefing about the frozen planet. It was believed to have an atmosphere about 2,000 miles deep consisting mainly of methane with some ammonia and helium. Below that was a layer of ice at least 6,000 miles thick, and beneath that must be the core of the planet, more than 12,000 miles of rock.

Because of their velocity the ship would need, in addition to the deceleration by the chemical motor, to use atmospheric braking to help attain the right speed. Too high a velocity and the planet's gravity would be insufficient to pull the ship around it. If the speed was too slow, the powerful attraction of Neptune would claw the ship and its crew into its icy embrace. And there was nothing any of them could do. With his three companions Chris must await the outcome of this delicate balance of forces with what fortitude he could muster.

Even now the signal that would start the chemical motor was streaking across space towards them. When it arrived the motor would roar into life and the ship would shudder under its tremendous power. Chris felt utterly helpless. He could only wait.

His mind was working a little more clearly now. Since the radio message he'd forced himself to think and gradually he was overcoming the torpor into which he had sunk. If they survived the circuit of Neptune and the ship could really be put into a course back to Earth, the old problem remained. Wouldn't it be better for two of them to get back safely rather than for all to die? Of course he'd given his word that whatever the future had in store, all four would face it together. But wouldn't he be justified in breaking his word if it would ensure the survival of two of his friends? Would deception be justified if it saved life?

There would, of course, be another problem. He would never be awake alone. At the moment his companion was

Serge. Could he persuade the Russian, too, to go back on his promise and slip with him out into space? Morrey and Tony would slumber on in their frozen sleep until Earth was reached. Then it would be too late not to accept the sacrifice that Serge and he had made. Perhaps they could even forgive him for breaking his word.

While Chris was still arguing with himself, the signal from the Cape arrived. Obediently the huge motor roared into life and he felt himself thrust fiercely into the depths of his contour couch. So great was the pressure that he would find difficulty in speaking, particularly in his much weakened state. For the moment he need not face up to the decision he'd been trying to reach.

Every one of the astronauts had experienced hundreds of lift-offs under great thrust. During training they had constantly endured spells of high "g" and had become quite used to it. But this time, perhaps because of lack of food, Chris lost consciousness under the fearsome push of the motor. Serge too succumbed to the intense physical stress. Thus, as the spaceship approached Neptune, all four members of the crew lay still and silent.

A tense Sir George Benson paced the long main room at the Cape Kennedy Control. Precise calculations had been made of the timing of the signal to activate *Neptune I's* motor. The ship's velocity had been reduced considerably under the gentle and unnoticed thrust of the ion drive. But the final adjustment had to be made with the chemical rocket engine—and there would be no way of learning the result. Because of the immense distance, a signal took three and a half hours to pass between Earth and the ship. In that time too much could happen.

When would they know if the ship had entered a planetary orbit, shot away into space or smashed itself on the frozen surface? The event would be long over before the answer reached Earth. No wonder, Whiskers thought, Benny looked

so grim and white.

“The tracking signals are still coming in,” Mr. Gillanders told his chief, but both men knew that this meant little. Even now *Neptune I* and its crew could have been destroyed, while the signals that all was well would continue to arrive. If, after another two hours, those signals were still picked up, it would show at least that the ship had not been destroyed, but they would not learn until later whether *Neptune I* was continuing on into the void or circling obediently around the planet. Not until he received another verbal message from Chris would the Director’s anxieties be lessened.

Sir George dreaded the ship’s journey back to Earth. He would have to hear his friends’ messages to the end, and they would die one by one. He more than half hoped that *Neptune I* would smash into the planet!

How long he’d been unconscious Chris had no idea. Gradually he became aware that he was still alive. Next he realized he was lying on his contour couch and the crushing force of the rocket motor had died away. He tried to move his arm, but he found he couldn’t.

That was strange. If the motor had finished its job they should be in free fall. He should be weightless and be able to sit up and move about as lightly as a feather. For a moment panic possessed him. Had he suddenly become paralysed? He must try again, for he would have to operate the A.H.A., to say nothing of reporting observation of the planet.

It was no use. He just couldn’t move a limb. There was only one thing to do. He must let Serge know that he must take over.

He tried to call out—and realized he hadn’t made a sound.

For a very good reason. He couldn’t move any of the muscles of his face. Again he felt filled with alarm. Was this a new kind of space sickness that had struck him? Was Serge suffering too? A length of cable that must have been left lying

around was floating about the cabin like a long thin flying snake. So they were definitely in free fall and his immobility was not caused by high thrust.

It was getting more difficult to think. Was his brain becoming affected as well? With a supreme effort of mind and body Chris managed to raise his head a few inches. He could see Serge motionless on his own couch. So Serge had been stricken as well!

With both of them unable to move, what was to become of Tony and Morrey up there in the “fridge”? As he let his head sink back on to the padded cushion Chris tried hard to think. But it was becoming more and more difficult. A delicious lethargy was creeping over him. Not only could he not move, but he found he was losing the desire to move. After all, if Serge and he were to die, the other two would complete the journey back to Earth and that great problem would have been solved. It was comforting to think that something had happened to take the matter out of human hands. He gave up the struggle to think and sank gratefully into oblivion.

“This can only mean that the ship went into orbit!” shouted Mr. Gillanders as a little knot of scientists crowded round the serried banks of instruments.

The tracking signal from Neptune had begun to fade slowly. Then it had disappeared altogether. They knew that the ship had reached the proximity of the planet when those signals had been sent out, so they were a true guide to the fate of *Neptune I* and its crew.

When Whiskers had seen the failing signals as recorded on the dials and screens, his heart had sunk. He was astounded when Billy Gillanders burst out with his opinion.

“You see,” Billy explained, “if the ship had crashed into the planet the signals would have ceased abruptly. And if it had continued on into space there would have been no noticeable diminution of strength for a considerable time. This fading means that the ship has been captured by the

planet's gravity and is circling round it. We shall receive no signals at all when it passes on the far side. The planet will blanket them, but they should re-appear as the ship emerges on to our side of Neptune."

"How long will that be?" asked Whiskers. His throat felt cracked and dry, and he scarcely recognized his own voice.

Mr. Gillanders thought for a moment.

"It all depends on how close to the planet the orbit is," he said. "If it's a close orbit one circuit may take as little as two and a half hours. A distant orbit could take many days. But I think that the ship is pretty close in. I would say that, to circle half-way round and re-appear on the other side, it will take from an hour and a quarter upwards."

A tired Sir George Benson walked rapidly across the control room and joined the group. He didn't know whether to be relieved or dejected at the information the instruments had brought. If the ship was in orbit—and he agreed with Mr. Gillanders that the matter would be settled beyond doubt in upwards of an hour—they would still have the agonizing experience of listening to the crew slowly dying.

Chapter Sixteen

The staff at Control waited as the seconds crawled by. If the tracking signals were picked up again, it would be possible not only to say definitely that the ship was in orbit, but also to estimate its height above the frozen surface. Perhaps they would get verbal messages back from Chris and his crew—descriptions of a sight that no human eyes had ever seen before. But that didn't matter nearly so much as the mixture of pain and joy in hearing their voices again.

Everyone in the control room at the great space centre at Cape Kennedy knew that the fate of *Neptune I* had already been settled, and the time lag seemed more unendurable than ever. Benson sank into a chair and buried his lined face in hands that trembled. Whiskers stared motionlessly ahead, his eyes dull as if all emotion had been wrung from him. Billy Gillanders strode up and down the long room, continually peering at the instruments and dials. Dr. Rosenberg and Professor Boronoff alternately gave orders and snapped at the engineers and technicians operating the controls as if they were to blame for the delay of the signals.

"I think I'm getting something," one of the engineers suddenly called as he studied his instruments. There was a rush towards him. Even Sir George turned his careworn face in that direction.

Sure enough, one of the sensitive needles showed a flicker. There was a frantic twisting of controls in an effort to tune in the weak signals even more sensitively. A few seconds later there was no longer any doubt. The signals were getting stronger every moment. Sir George stood up and joined the others. *Neptune I* was coming round from the far side of the planet. Its broadcast was beginning to get through! Ten minutes later the computer staff were able to announce that the spaceship had gone into orbit about eighteen hundred miles above Neptune's surface.

“That’s well within the planet’s atmosphere,” commented Dr. Rosenberg. “As far as we can tell this extends some two thousand miles above the surface and is mainly of methane.”

“What about friction?” asked Whiskers. “If it’s inside the atmosphere, won’t the ship burn up?”

“That’s a possibility,” admitted Rosenberg, “but at eighteen hundred miles the atmosphere cannot be very dense.”

“There is another possibility,” interposed Professor Boronoff, not to be outdone. “Because of the extreme cold the upper atmosphere of the planet may consist of frozen crystals of methane. If that is so, then the passage of the ship through would result in a cooling.”

“So you think the crew could be frozen instead of scorched?” persisted Whiskers.

“They won’t be either,” Sir George Benson interrupted. “The insulation of the ship is sufficient to prevent either eventuality.”

“Oh, well, we’ll probably soon be hearing from whoever is on duty,” Whiskers consoled himself.

However, the minutes passed by and there was no sound from *Neptune I*. Though the tracking signals were now coming in strongly, the voice transmitter remained silent.

“What’s happened to them?” Sir George demanded impatiently. “They should be reporting their situation.”

“Maybe they are too occupied to broadcast just yet,” suggested Mr. Gillanders, though he didn’t really believe this and was beginning to feel a little worried.

More time went by and there was still no word from Chris or his crew. Sir George and his staff were becoming more alarmed every moment.

“They’ll be off round the far side again soon,” the Director muttered. “What can have happened?”

It was only too plain that, when the tracking signals began to fade once more, all was not well aboard *Neptune I*. The ship had completed its first circuit of the planet and was now well on its second—and there was only silence from the crew.

“Could the radio be damaged?” asked the worried Whiskers. “Perhaps, as it was merely patched up, the deceleration put it out of action again.”

“That’s a possibility,” admitted Benson, “but only a remote one. I should imagine that Tony made a pretty sound job of the repairs. No, I don’t like it. Something must have happened, or they would have been through before now.”

They had to possess themselves with what patience they could muster while the spaceship passed once more behind the planet. Now that more than a complete orbit had been done, the computer was able to work out the position of the ship more accurately. Sir George glanced at the figures impatiently. The important thing was—what had happened to the crew?

During the long slow passage of the spaceship across the face of the planet scarcely anyone in Control spoke. They were all straining to hear any words from *Neptune I*. But the voice radio remained obstinately silent!

Though he knew it would be hours before it could reach them, Sir George ordered constant efforts to contact the crew. He knew that sometimes when an astronaut is semiconscious, the persistent voice from his radio is sufficient to arouse him to respond.

It was all in vain. By the time *Neptune I* had made four circuits of the planet, the urgent questions from Control had had time to elicit a reply, but all was silent. Not a bleep from the voice radio. Not a single indication that any of the ship’s crew remained alive.

Sir George Benson called a conference of his chief advisers to try to form an opinion of what might have happened. But it was, of course, pure speculation.

“It’s certain,” the Director began, “that the ship didn’t crash or go shooting on past the planet. We know it went into orbit at an altitude of eighteen hundred and five miles. We know the tracking radio is working well, so the ship doesn’t seem to have suffered damage in getting into orbit. What then could have happened to the crew?”

He had the recordings of the crew’s last messages repeated. The growing weakness in their voices was plain. There hadn’t been any joking or back-chat for some time, and the messages became briefer as the end of the record was reached.

“I don’t think they had any idea, towards the end, of how close they were to the planet,” Mr. Gillanders said. “There’s no indication that they were aware of their position.”

“It seems that they were aware of very little,” sighed Whiskers. “They were all sinking fast.”

The medical men expressed the opinion that, in their weakened physical state, the duty pair of astronauts were quite likely to pass out under the strain of deceleration, but as soon as the ship was in orbital free fall, they should have recovered. It was quite plain that this hadn’t happened. If the stresses set up by the slowing-down process had caused them to lose consciousness, they hadn’t recovered after many hours of free fall.

Perhaps this had already gone too far. They discussed at length the possibility that the crew were so weakened by lack of food that unconsciousness would merge into death. If this had happened it would be the most merciful end. But ‘had it?

“I don’t think they were quite that far gone,” one aero-medical specialist said. He’d been in charge of the medical side of the astronauts’ training. He boasted that he knew every pore in their bodies and every thought in their heads. He was sure that Chris and his friends would, unhappily, last many weeks yet.

“Then what’s the answer?” asked Dr. Rosenberg.

“I don’t know,” admitted Benson, “but I fear the worst.”

“What are your plans now, Mr. Director?” enquired Professor Boronoff. “Will you break orbit and bring the ship back?”

Benson would have liked to say “no”. He would have preferred to let *Neptune I* circle for ever, a captive of the giant planet that gave it a name. But perhaps it was his duty, apart from scientific reasons, to bring the ship back to Earth. The least he could do would be to pay his last respects to the remains of his friends.

“We’ll break orbit as soon as possible,” he announced flatly.

So the computer hummed and its lights winked until at last it chattered out the command that would bring the lifeless ship back to Earth.

“Let me know how it goes,” Sir George said.

A great weariness had fallen on him. It was more than physical fatigue—though he’d been on duty almost continuously for many days. Rather it was the exhaustion of a mind that had suffered too much, and had been called upon to take too many decisions, to weigh up critical situations, to co-ordinate the wide activities of the huge space flight centre. Thus it was that Sir George made one more decision that would affect himself. He would ask UNEXA to relieve him of his job once *Neptune I* had landed. He would retire, after bringing back to Earth his last ship with its tragic cargo.

The heart of Whiskers, too, was as heavy as lead. He’d been the guide, philosopher and friend of the four astronauts for years. He’d helped them through some difficult periods, and though he’d never been on a single venture with them, his cheery voice had kept up the spirits of the four young men. Their radio back-chat had become a legend among the men at the Cape, who had often heard Whiskers coaxing spirits back into the distant astronauts.

Now he was wanted no longer. He would return for the last time to that delightful wife and the house near Aylesbury in Buckinghamshire. Several times during the first part of the ship's flight he'd gone home on leave, but Mrs. Greatrex always knew how anxious her husband was to get back on duty. Though he'd retired from the Royal Air Force long ago, Whiskers had literally lived for these assignments. And now there would be no more of them. He must get used to the role of a man who had, at last, finally retired to a life of inactivity in an exciting world.

Mr. Gillanders, too, felt deep grief at the loss of the astronauts. Like his chief, he had known these four young men intimately for years. He had known Chris as a boy, and Chris had stayed at his home at Woomera. He remembered vividly the courage and endurance of the youth to whom his family had grown deeply attached. Chris and his daughter Betty had been particularly good friends, and they still corresponded regularly. Though he felt deeply for Tony, Morrey and Serge, the loss of Chris would be like that of his own son.

So it was a sad staff at the Cape Kennedy control centre that learned that *Neptune I* had obediently broken orbit and was headed back home. Though it was a tremendous technical achievement, there was no jubilation in that long room. It seemed hardly worth the effort now that the crew were no longer alive. Purely as a formality, a constant search was maintained for the slightest signal that there was life aboard the ship. But all was silent.

Under the steady thrust of the atomic motor, the spaceship was building up velocity. Already Neptune had shrunk to a tiny ball of light in the black canopy of space. Because the lateral rockets wouldn't work, the odds against the ship being able to get into Earth orbit ready for landing were astronomical. If only one member of the crew had remained alive it might have been managed. But now—

One day Professor Boronoff knocked on the door of the Director's office and failed to get a reply. He knocked more

loudly, and then opened the door. Inside, Sir George Benson was sprawled across his desk unconscious.

The opinion of the doctors, who were hastily summoned, was unanimous. After months of anxiety and strain, the Director had suffered a heart attack. His life was in danger. He must be taken to the spaceport's medical centre without delay. Mr. Gillanders made arrangements at once and in less than an hour the Director was in the resuscitation machine that would relieve his labouring heart of its burden. There was nothing more that could be done. Mr. Gillanders and Whiskers returned sadly to the control room.

Never had the fortunes of UNEXA seemed at a lower ebb. The Neptune expedition had ended disastrously. Its four most experienced astronauts were stiff and cold in their vast flying coffin. And now Sir George Benson, the Director from whom the Agency had long taken its inspiration and driving force, was lying battling for his life in a monstrous machine that would try not to let him die.

Chapter Seventeen

‘Do you think it’s any use continuing this?’

Dr. Rosenberg nodded towards the technician who was keeping constant radio watch on *Neptune I*.

Billy Gillanders knew what he meant. In effect the spaceship—and whatever was inside it—had become just another piece of space debris. It was but an addition to those man-made objects that, year by year, were wandering about the solar system in increasing numbers.

It was a great temptation to call off the radio watch, for it tied up several highly skilled men and some valuable pieces of equipment. Mr. Gillanders thought seriously about it, and then remembered his friend, fighting the most important battle in his life. Sir George wouldn’t wish them to halt the exercise. He’d want the watch to go on until *Neptune I* crashed or until it passed beyond radio range. At least it maintained a tenuous contact with those four brave young men.

“No. Keep it going,” Mr. Gillanders ordered.

And so it was kept going for many weary weeks. Though the ship was streaking homeward and the radio range becoming less, not a sound had come to indicate that anything aboard was alive. Food supplies must have vanished long ago. Mr. Gillanders shuddered to think of the crew’s last moments.

By now Sir George Benson had passed the crisis. He no longer needed mechanical help to keep him alive. Still in the spaceport’s medical centre, he lay in a pleasant ward and was receiving every treatment that medical science could devise. Yet, in spite of this and of the most devoted nursing, he was making no more progress. For weeks he’d lain inert, passively submitting to the ministrations of those about him. It was as if he had no more interest in the world around.

To see him thus tore at the hearts of his closest friends. It was hard to believe that the brilliant scientist, the forceful Director of UNEXA, had come to this. Though Billy, Whiskers and the others visited him constantly, he scarcely ever spoke, though he was quite able to do so.

“He’s shut himself up in a mental shell,” sighed Whiskers, “and we can’t crack it open.”

“We’ve done all we can for him,” one of the medical team said. “Physically he’s improved tremendously, but he shows no interest in life, no desire to get better. Unless he does, he won’t improve any more. In fact he’ll soon start to deteriorate again, and this time there will be nothing we can do.”

His friends redoubled their efforts to break through Sir George’s defences and capture his interest. But it was of no avail. They were not at all sure whether he’d even heard them. Brokenhearted, Whiskers returned to England, but only because Mr. Gillanders promised to recall him if there was any change in Sir George.

No one mentioned the possibility of a signal from *Neptune I*. Everyone at the Cape had come to accept the fate of the ship and its crew. With his four young friends dead and his old friend Benny just waiting to die, it was a shattered Whiskers who returned to his wife and home.

How was he to know that, millions of miles away, a miracle was happening?

If there had been a watcher inside the cabin of *Neptune I*, what happened would indeed have seemed to him like a miracle. The dead began to come to life! But the true miracle lay in the circumstances that led to their recovery. The electrical fault which had been so disastrous in destroying most of the wiring, had also damaged part of the cabin’s insulation, and that is what saved the astronauts’ lives.

Chris never guessed that when he and Serge found it

difficult to move it was because the temperature was falling. As they sank into oblivion it was without realising that hypothermia was taking place. Because the insulation was damaged the cabin was slowly losing heat. Like Tony and Morrey on their couches in the “fridge”, Chris and Serge had frozen until there remained but a flicker of life. It was a chance in millions—but it had happened. A natural hypothermia had taken place.

Soon *Neptune I* would be within the orbit of Mars, Earth’s next-door neighbour. During the last few days there had been an imperceptible rise in the cabin temperature. With each passing hour the radiation from the Sun became stronger. Just as, before, the faulty insulation had let the internal heat escape, now it was allowing external warmth to creep in. The de-frosting of Chris and Serge was slowly taking place.

It was Serge who showed the first visible sign of life. An eyelid flickered slightly, and an observer would have noticed a lessening of the pallor which always accompanied this living death. Chris, too, looked a little healthier, but the process was a slow one—much slower than with the A.H.A. However, there came a time when both astronauts began to breathe again, and soon they opened their eyes.

Even now that they were partly conscious, their brains had not yet begun to work. When at last thoughts began to flow through Chris’s mind, it was to note that he’d now begun to feel slightly less stiff than he had a moment before. Experimentally he tried to move an arm—and succeeded. Then he turned his head and saw the inert Serge a few feet away.

For a moment Chris had forgotten what the situation was. But now memory came seeping in and before long he recalled what a desperate position they were all in. Seconds before he’d felt a delicious lethargy spreading over him, and he’d hoped that he would fall permanently asleep so that Morrey and Tony could live. Soon it would be time to defrost them and for him to have a spell of hypothermia. As

always, he had the inner struggle to fight—should he break his solemn word to the others and sacrifice himself? Or must he keep faith and awaken Morrey?

But what had happened to Serge? Even as he turned to look the Russian struggled up from his couch.

“It’s cold,” Serge said simply.

“So it is,” Chris agreed, his mind still occupied with his problem, though having Serge there really left only one choice open to him. He dragged himself weakly towards the A.H.A.

“But why has the temperature fallen?” Serge persisted.

“Does it matter?” Chris answered shortly, as he switched on to de-frost Morrey. How he wished he’d never wakened from the delightful inertia he’d felt a little time before.

“I will report to Control,” the methodical Serge said.

“Serge,” Chris shouted suddenly. “Have you noticed we’re under ion drive?”

This was strange. Now he remembered that they had been approaching Neptune and that Control had signalled the chemical motor to begin deceleration. He’d slipped into unconsciousness for a while under the thrust. When he’d come round he remembered the paralysis that he felt, even though they were in free fall. That was not many minutes ago, and now they were travelling along under the steady urging of the atomic motor.

It was crazy. Had they gone into orbit around the planet yet? He started out towards the observation post to settle the question. The giant planet would be there in view to confirm that he hadn’t lost his senses. But it wasn’t.

Chris reeled under the shock. The planet was nowhere to be seen, and the star pattern was all wrong. That—that must be the Sun, he gasped to himself in utter amazement.

“Serge,” he croaked, “come and look here.”

The Russian made his way slowly to Chris's side. It seemed that he was gazing out into space for a long while, before he turned to his companion.

"We've been under hypothermia," he announced calmly.

Then it came to Chris in a flash. The change in their position could only mean that a considerable time had elapsed, and this, in turn, confirmed Serge's explanation. Somehow, they, too, had been frozen for a long period. They wouldn't be aware of it, of course, any more than if they'd had a spell in the "fridge". That stiffness that he'd felt—it only seemed minutes ago—must have been the onset of hypothermia. How it had come about without equipment he couldn't imagine.

His thoughts were interrupted by the appearance of Morrey. The American had been de-frosted automatically after Chris had set the mechanism going. Chris and Serge burst out with their startling information.

"But where are we?" the bewildered Morrey asked. "Have you reported to Control?"

"I reported half an hour ago. That is—" Chris began uncertainly. It was still too hard to believe that weeks—months—might have elapsed since that last call. On the A.H.A. yes, but without any help from it? It was incredible! A miracle!

"Wake Tony up," Chris said, as he reached for the microphone.

Joe Churms was the young man's name. Joe was on radio watch in Control. He'd been given this job, he was sure, because he'd been a few minutes late in arriving for a couple of mornings. It was the dullest job in the whole set up. As he leaned back in his chair, feet up on the powerful receiver, he thought seriously about giving Mr. Gillanders his resignation. It hadn't been his turn to do this hateful chore. Sir George wouldn't have made him do it. He would have

understood that a fellow has to have a night out occasionally, and that no one expects him to be on duty to time next morning. But Mr. Gillanders would listen to no excuses. Since Sir George had been ill, his deputy had been directing the spaceport. Mr Gillanders had curtly assigned him to this watch.

Idly Joe watched the seconds hand of the clock on his instrument panel. Each time that red finger completed its sweep it was one minute nearer the end of his “sentence”. Only another eighty-nine more and he’d be able to whip off the earphones. Some other miscreant would take over, he’d no doubt. Good luck to him. Joe had plans. A fellow was entitled to some compensation for the most boring job in the world.

“Neptune I calling Control. Neptune I calling Control.”

Joe overbalanced and fell to the floor with a clatter. The earphones were snatched from his head. For a second he thought he’d heard a voice. As he sheepishly righted his chair to the grins of fellow technicians, Joe reflected on the tricks the human mind can play. For months they had been listening for a voice from the dead. He’d been on the job for six hours, with nothing else to do but strain the ears for a sound that never came. Oh well, it had stopped him from falling asleep, which would have landed him in still deeper trouble.

The radio operator settled into his chair and began fitting the earphones. Suddenly the colour drained from his face. He jumped up and his chair went clattering over a second time.

“Hey! What’s come over you?” his nearest neighbour called. “Feel sick?”

“It’s—it’s them!” Joe croaked.

“What the blazes do you mean?” one of the other technicians demanded angrily. “You don’t joke on this job.”

“It’s no joke,” Joe insisted with growing excitement.

“Listen!”

He flicked the switch that would bring in the loudspeaker, for by this time most of the people in Control were aware that something strange was happening in the radio section.

“*Neptune I* calling Control,” came the voice of Chris with remarkable clarity.

One great gasp went up from those scores of men and women. They had heard a voice from the dead! Then pandemonium broke loose. Many wept, laughed, danced. It was some minutes before a white-faced Mr. Gillanders managed to restore order. Then he took the microphone.

“Control calling *Neptune I*,” he called in a voice that he couldn’t recognize as his own. “What has happened? We thought you were all dead. How have you survived? Over.”

In less than eight minutes a reply came back.

“Gosh! We must be close,” all in Control heard Chris burst out. “We don’t know what has happened but we think we’ve all been under hypothermia. Don’t ask me how. Tony and Morrey were in the A.H.A. Serge and I must have had a dose of it in the cabin somehow. Anyway, we’re all alive but very hungry.”

A slip of paper was pushed in front of Mr. Gillanders.

“You’re only thirty-seven and a half million miles away,” he told the distant astronauts. “We’ll have you back in no time, so get a jolly good meal.”

Even as he spoke the Deputy Director knew he was being too optimistic. They still had to work out how to bring the ship in without the help of the lateral jets. Nevertheless, everyone in Control—and others who came pouring in as the incredible news spread—were wild with joy. How much it would all have meant to Sir George Benson!

“I’m going to tell him!” Mr. Gillanders suddenly decided. “And get a call in to old Whiskers.”

This might be just the news that would jerk the Director

out of the apathy into which he had sunk. It might, conceivably, be the means of giving him the will to live. In any case, the astronauts had meant so much to him that it was right he should be told. Billy Gillanders left the seething Control room and raced to the Medical Centre.

There had been little change in Sir George's condition. He still seemed to lack the will to fight for recovery. What was going on in his mind no one knew, not even his closest friends. Some even began to believe that the thrombosis that had so nearly cost his life had also caused some brain injury. It was heartbreaking to see this once brilliant mind useless and inert.

"Perhaps it would have been better if he'd died," Billy had sighed more than once.

Now he paused to recover his breath outside the Ward in which his Chief lay. A tap on the door was quickly answered by the nurse on duty, for Sir George had been watched day and night. Recognising Mr. Gillanders, the nurse beckoned him in.

Though he'd visited his Chief hundreds of times before, every time Billy saw the still, pale figure in the spotless bedclothes, it still stabbed like a knife in his heart. Automatically he went on tiptoes to the side of the bed. He looked down on his Chief, but there was no recognition. So it had been for a long, long time. He leaned closer.

"Benny," he said, speaking very distinctly. "We have had a message from *Neptune I*. The crew are still alive."

For a moment he thought that his shock treatment would have no effect. He repeated the astounding news. Then, for the first time in months, Sir George Benson showed that he'd heard what had been said. His eyes focused on his friend and his mouth quivered in a useless effort to speak.

"It's true!" Billy went on. "Half an hour ago we picked up Chris's voice. Somehow all four have been frozen and have just thawed out."

Animation was returning to the Director's face as his brain took in Billy's words. It was almost as if a rusty machine, long idle, was at last beginning to work. Billy could have wept for joy to see his Chief's mind return from whatever distant place it had been.

"H—how far?" Sir George croaked in a voice hoarse from long disuse.

"Under forty millions," Mr. Gillanders told him eagerly. Then his face clouded. "But we still haven't worked out how we can get them down," he admitted soberly.

The change that was coming over Sir George Benson was nothing short of miraculous. Every second that passed seemed to bring him more life and strength. He raised himself on an elbow and sipped a drink from a glass beside his bed—something he'd never done before. Then, in a voice becoming continually stronger, he began to question his visitor.

Billy answered all the questions very happily, for here was proof that during its long period of inactivity, the brilliant mind of Sir George Benson had not suffered at all.

"Nurse," the Director declared at last, "get me a dressing-gown. I'm going to Control."

Chapter Eighteen

Though the doctors protested, Sir George was adamant. The only concession he made was that he would travel in a wheel chair. As he tried to stand at the side of his bed, he realised he had no choice. His mind had swung into action but his body required more time.

It was Billy Gillanders himself who triumphantly wheeled in the Chief, and many of those hard-boiled scientists and technicians wept unashamedly to see their leader back in his rightful place. They had already heard Chris's voice, and this too was like the return of one who had been given up for lost. It spoke volumes for the affection in which they all held Sir George that they restrained themselves from flocking around and overwhelming him. Only Dr. Rosenberg and Professor Boronoff came to shake his hand, almost too vigorously.

The warm greetings were interrupted by that amazing phenomenon—Chris's voice from space. Discreetly his colleagues turned away from Sir George Benson so that they would not witness his emotion. Not until he asked to be wheeled to the transmitter did they turn to him once more. Billy pushed the chair across the room, and the radio operator handed over the microphone. With visible emotion, Sir George spoke.

“Chris,” he said, “Morrey, Serge, Tony. This—this is wonderful. You are all well? I'm sorry I wasn't here when you first came through. I've—been on leave. But I'm staying here till we've brought you in.”

He handed over the microphone, for the effort of speaking calmly had shown up his weakness. It was better to end his message rather than let his young friends find out how sick he'd been. Now he must wait as patiently as he could for Chris's reply to come back. Meanwhile data processing from the ship was going on at full speed. Soon they would know if

Neptune I could be brought into earth orbit, or whether the miracle had been in vain.

It had been agreed that the astronauts should take a good meal. If they were going to make a successful landing, their stocks would be ample. But if this was impossible—and Chris had no illusions about it—then neither the conservation of food nor a second miracle could save them. They would want to be in top form, both in mind and body, to give them the best possible chance.

Chris or one of the others was sending in data regularly from the ship's instruments, or such of them as were working. It was a great thrill to get the acknowledgment from Control so quickly. The crew really felt they were on the homeward stretch.

Because they had been so busy and excited, none of them noticed at first that Sir George Benson hadn't yet spoken to them. The idea had only just begun to trouble Chris when the well-known voice spoke. All four of them answered at once. It was marvellous to hear Sir George's voice again—even though distance made it sound a little weaker than it usually was.

So he had been on leave! Good for him. They knew that his devotion to duty could, and often did, drive him on to breaking point. They could imagine what he'd felt during their long silence. A holiday away from the Cape would be fine for him. Even so, they had no doubt that he'd lived, as always, on the end of a telephone. When he'd got word that *Neptune I* had come through on the radio, they could imagine him tearing back to the spaceport from wherever he'd been. Chris could picture him striding about the Control centre, barking orders to all and sundry.

As they sat strapped to their couches and eating a substantial meal, Chris turned their situation over in his mind. The ship was streaking towards Earth at a high velocity. The only way it could be decelerated was by firing

the atomic and chemical rockets. But their thrust had to be against the ship's line of flight. This meant, of course, that the ship would have to be turned through one hundred and eighty degrees so that the thrust chambers pointed in the direction they were now moving. And the lateral rockets to do the job were all useless. How, then, could *Neptune I* be made to face this new direction?

If all else failed, one of them—and Chris would make sure he did it himself—could go outside the ship to the nose cone. Then a tremendous push would start the ship turning almost imperceptibly. Because of the vast difference between the mass of the ship and his own, Chris would shoot off into space. It would be no use using a safety line, for when he reached the end the ship would be jerked back again to its former position. Only by allowing himself to go wandering off into space could he make sure that *Neptune I* would slowly turn tail first. Of course the motors would have to be ignited at precisely the right moment. Otherwise the ship would go careering off in a new direction and the situation would be just as bad.

The sooner this was done the better. He must find some excuse to get outside. When he'd set the ship turning he could tell his friends what he'd done over the helmet radio. Then he would give the order to start up the chemical motor when *Neptune I* was in the right position. By that time he himself would be miles away. He'd be doomed to be another article of space debris, but his companions would have been given a chance to live. It seemed ironical that his life had been saved by a miracle, and he was now going to throw it away. But at least it wouldn't have been wasted. Three of the crew would return safely to the Cape.

“Benny! It's great to see you back on your feet!” exclaimed the delighted Whiskers. Then, seeing his old friend still in a wheel chair, he added lamely, “Oh, well, you know what I mean.”

Whiskers had come tearing across the Atlantic the moment he'd heard the wonderful news. It was later rumoured that he was half-way across the ocean before he discovered he was still wearing an old pair of bedroom slippers! He'd been shuttled to Control from the air strip by helicopter. His delight at seeing the wonderful recovery of his old friend was matched only by his feeling of wonder that Chris and the others were still alive. Even now he could hear Morrey's slight drawl coming from the loudspeaker.

Before long he was seated at a microphone, babbling all sorts of nonsense to his distant friends. It was like old times. He had never thought he'd do this again.

Meanwhile Sir George Benson and his assistants were wrestling with the problem of how to position the ship for the run in. Without the use of the lateral jets or the gravity of a nearby planet, it seemed an impossible task. Of course Earth's gravity would eventually pull the heavier tail round in the right direction, but this would be much too late to decelerate *Neptune I*. The same solution that Chris had reached also crossed the Director's mind. But it was premature even to think about it yet. They still had a few hours in which to work out an alternative.

"*Neptune I* calling Control. I am going to make an external examination of the ship. Will report any meteorite damage to casing later."

It was Chris's voice, and it aroused the Director from his thoughts. Of course the outer casing must be examined carefully. After those long months during which the ship had been crossing space it must have encountered countless fragments of space dust. Most would be far too small to see, but a few might be larger. It was these latter, even though they were smaller than a grain of sand, that would do the damage. Because of their very high velocity they would vaporise immediately they struck the ship, at the same time vaporising a minute amount of the outer casing. A number landing on the same spot could even penetrate the protective layer, and this would expose the ship when it entered denser

meteor clouds nearer the Earth.

But why was Chris going outside to make the inspection? It was Tony's job, and he was the expert. He had often had to patch a damaged section during a flight. Chris was no mechanic, so why was he going to do the job? Tony was all right after his long sleep, Chris had said so. He'd sounded well enough each time he'd spoken. So why wasn't he doing the inspection?

No! It couldn't be! But it might.

Sir George hadn't been a close friend of Chris for some years without gaining an insight into how his mind worked. He had little doubt that Chris would think of this method of turning the ship. And, knowing Chris, he'd no doubt who would do the job!

Should he order his friend to remain inside? The Director had thought, when the glorious news of the survival of the Neptune crew had re-awakened his will to live, that he would never again have to make a life and death decision. Yet here, within the space of hours, while he still wasn't fit to leave his wheel chair, this new problem was thrust upon him. Without doubt, unless the ship could be turned, all four astronauts would be lost. If Chris was going to make the sacrifice that Sir George thought he was, then three of them might be saved.

No, he couldn't do it. He couldn't jeopardise the chance of recovering three of the crew because of his affection for the fourth member. He must pretend to take Chris's message at its face value. His only comfort was that in any case it was probably too late to veto Chris's intention. Even now he might well be outside the ship, and no amount of orders, threats or cajoling would persuade him to return. Sir George felt his pulse racing and his head began to swim as the old tension built up once more.

He struggled to take a grip on himself. There was only one thing to do, and that must be done quickly. He went over to the transmitter and spoke urgently.

“Control calling *Neptune I*. Chris, you are to delay inspection for a time. You are to report if any of your jet guns are working. This is urgent. Report if your jet guns are working. Over.”

It was a chance in a thousand that there might still be some pressure left in one or other of the little guns that the astronauts used to propel themselves when out in space. If there was, then this could be used to set the ship turning instead of the push that would send Chris off into the void.

Though he hadn't revealed his thoughts to any of his colleagues, they could see that something had upset Sir George. His face had gone very drawn, and Whiskers and Mr. Gillanders sensed that he was near a relapse. His hand had shaken visibly when it held the microphone. They stood by him with growing anxiety.

It would take at least three minutes for his words to reach the distant spaceship. In that time Chris could have left *Neptune I* and given the nose that fateful kick. Of course he might be completely wrong. Chris might never have thought of anything but seeing the outer casing for himself. If that was so, and the jet guns were empty, would it not be putting the idea into the astronaut's mind if he voiced his fears?

He must take the risk. He must assume the worst and alert the other members of the crew.

In spite of Tony's protests, Chris insisted on making the external inspection himself. The mechanic was really upset. Couldn't his leader trust him? It was his job, and he'd done it scores of times before. If damage was found it would be he, Tony, who would have to repair it. But Chris's order had been peremptory, so Tony hid his hurt feelings as Morrey and Serge assisted their leader to prepare for his excursion.

Hardly had Chris, with a casual wave of the hand, stepped into the airlock, when the radio spoke. Sir George Benson's voice sounded strained and his command was urgent. Chris was not to carry out the external inspection just yet, and they

were to report if there was any life left in the jet guns.

It was too late to recall Chris now. By this time he'd be opening the outer door and stepping into space. While the crew were still wondering what it was all about, the voice of Sir George continued.

“Morrey, Tony, Serge,” it said, “if Chris has already left the ship, you must contact him by his helmet radio. I fear he intends to set you turning by pushing off into space from the nose. If he does this he'll be lost. If there is pressure in either of your jet guns, it can be used to put the ship in motion. Quickly now. Get Chris back and look at those guns.”

So that was it! In a flash Tony knew why his leader had insisted on going outside. How blind he'd been! And why hadn't he had the same idea himself? Like Morrey and Serge he blamed himself for not anticipating Chris. But they must waste no time on idle regrets. Action was necessary.

Morrey went over to the radio by which he could call Chris. Tony and Serge rushed to the rack, holding their jet guns. They were all there, so Chris hadn't bothered to take one with him. Morrey tried to reach Chris on the radio, but in vain. He had cut off his receiver and there was no way of contacting him. Tony and Serge examined all the jet guns. It was as they feared. There wasn't an ounce of pressure left in any of them!

Chapter Nineteen

“Empty!” gasped Tony after the last jet gun had been tested.

“He isn’t answering,” declared Morrey when Chris failed to respond.

The horror of the situation came home to them. Sir George, millions of miles away, had been able to guess what Chris was thinking of, while they, his own crew members, had failed. Instinctively they knew that Sir George was right.

“What are we to do? I’m going out after him,” Morrey moaned in despair.

“But you can only go the length of the safety line,” Serge pointed out. “If Chris has pushed off, you’ll never reach him. And don’t say that you’ll push off after him. Without a jet gun to steer you, you couldn’t even go in the same direction.”

However, Morrey was already climbing into his space-suit.

“If he’s in reach, I’m going to grab him,” he said between his teeth. Serge went over to help him.

“Wait,” cried Tony. “I’ve an idea.”

The other two astronauts paused, wondering what he had in mind.

Tony had taken the jet guns over to the oxygen supply line. With a few deft twists he removed part of the valve. Then he inserted a small length of rubber tube which he’d produced from the depths of his “junk” cupboard. The other end he slipped over the inlet valve of one of the jet guns, and with a twist of wire, secured it in position. Even as Morrey realised that Tony was about to try charging the gun with oxygen, the young astronaut opened a cock and they could all hear the hissing of the high pressure gas.

Normally the jet guns were charged with nitrogen, converted by pressure to liquid form. Yet there was no

reason why oxygen shouldn't do the same job, except that it was too precious. As a rule, no one in a spaceship would dream of using this vital gas for anything but sustaining life. Usually the problem was to conserve oxygen. But here was Tony almost committing sacrilege.

Would it be effective? That was all that mattered. If it could get Chris back and turn the ship, then they would willingly sacrifice their last gasp of oxygen. Tony handed the gun to Morrey, who was now ready to enter the airlock. There was no time to test the gun. It would just have to work.

Outside the ship, Chris had paused for a moment to take in the sight of his craft as, reflecting back the distant sun, it appeared to hang motionless in the black and starry sky. It was a sight that moved him tremendously, for he would shortly leave it for ever. While still in the airlock he'd switched off his helmet radio. He didn't want any painful arguments with his friends if they should guess what he was about to do.

The safety line was snaking about in its lifeless condition. Chris had ignored it. He was lightly holding a hand-grip on the outer casing as he took his silent farewell of *Neptune I* and his three friends. He tried, without success, to pick out which of those innumerable points of light would be dear old Earth. So he gave a general farewell to all the star-spangled universe, which included some of the planets he'd already visited and the rest which he would never live to see.

With an effort Chris recalled himself to the task in hand. He must make his push as powerful as possible. What would be the reaction of Morrey, Serge and Tony when he switched on his helmet radio to tell them what he'd done? He would have much preferred to leave in silence, but he must warn his friends so that they would be prepared to start the rocket motor as soon as the ship had turned to the right direction. Chris was right at the ship's nose now, and he braced himself for his last great effort. He paused to offer a silent prayer, for he believed in God.

Sir George Benson was wracked with anxiety as he waited for the minutes to pass. His assistants had all heard his frantic instructions to the rest of the crew to persuade Chris to return should he have left the vessel, and they, too, could see that the astronaut must have worked out how to save his friends if all else failed. A deathly stillness spread as everyone awaited a reply. It came after what seemed an endless time.

“Chris has left the ship,” the voice of Serge said, and everyone could sense the effort he was making to speak calmly.

“We have checked the guns and all are empty,” he went on, and Sir George couldn’t suppress a groan. “Tony is trying to charge one of the guns with compressed oxygen. Morrey is suited ready to go out.”

Charge a gun with oxygen! Of course it should be possible. Now that the ship was relatively close to Earth there was no longer the same need to conserve the precious gas, and they all knew Tony’s skill. If the job was possible, then the Director had little doubt that his best mechanic would manage it. But suppose Chris had already kicked himself off into space? It would be virtually impossible to go after him.

So the agony of suspense must continue. Not until he knew the gun would work and was doing the job instead of Chris, could Sir George relax. His friends were worried about the effect the situation was having upon him. His hands, much thinner than they used to be, were trembling. His face had again lost that touch of returning colour. Much more of this and the Director would die in his chair.

It was as Chris was bracing himself for the last mighty effort of his life that he took a last glance down the length of the ship. His heart nearly stopped as he saw a suited figure emerge from the airlock and wave at him frantically. Chris’s first reaction was anger that one of his crew had dared to

follow him outside the ship. Whoever it was would try to stop him from doing the job he'd resolved to do. He must push off at once before he could be prevented. His knees bent ready for that fateful spring.

He paused. The someone who had followed was waving something. It was a jet gun! As if to draw attention to what he held, the second astronaut released a blast from the gun and came shooting towards his leader. A second blast in the opposite direction brought him to a halt at Chris's side.

Chris was utterly and completely staggered. He'd secretly looked at every gun before he'd decided to sacrifice himself. All had seemed empty. Yet here was one of his friends using a gun that most certainly had some power in it. Now a hand was laid firmly on his arm. It was too late to carry out his plan. His muscles relaxed and a tumult of feelings welled over him.

Morrey was making signals that Chris should switch on his helmet radio. Like an automaton the crew leader complied.

"Hold on, Chris," the voice of Morrey sounded urgently. "We've got a gun working. Sir George rumbled what you're up to and warned us. Come inside, Chris."

Chris's feelings were very mixed. Astonishment that wily old Uncle George had guessed his intention; wonder that a gun should be working when a few minutes before they had all been dead; relief that the gun could do the turning job more efficiently than he could.

"What have you done to that gun?" he asked. "The gauges were all at zero when I looked at them."

"Tony has pumped some oxygen into this one," Morrey told him, "and it works. See!"

So saying he let out a squirt, and he and Chris floated away.

"All right," Chris conceded, "but I don't know, he's done it. Let's see if we can get the old ship twisting."

Arm in arm the two astronauts propelled themselves back to the nose from where Chris had just been preparing to jump. As they settled into position, the airlock opened and out shot Serge complete with his gun.

“Kinda getting crowded out here,” Morrey’s voice declared as Serge joined them.

“Is your gun working, too?” asked Chris, and Serge demonstrated that it was.

“Why didn’t I think of the oxygen?” sighed Chris. “Well, let’s get the old boat turning.”

Under his direction Morrey shot three blasts away into space while clinging on to the nose.

“That should do it,” Chris said. “We’d better get back inside.”

Meanwhile Tony, who had been listening in to their conversation, reported the good news to Control. By the time the three astronauts were all inside the cabin the message had reached Sir George, and the Director of UNEXA, the man in charge of this Earth’s exploration of space, wept with relief.

“Is she turning?” asked Morrey, as he removed his space-suit. Tony turned from the observation port where he’d been watching the star field.

“They’re definitely moving,” he announced.

Chris joined him and watched for a moment. The brilliant suns scattered over the velvet backcloth were all moving slowly. *Neptune I* was indeed turning right round.

“We’ve done it!” Tony shouted with excitement.

“You mean you’ve done it,” Serge said, clapping his hand on Tony’s shoulder. “If you hadn’t thought up that oxygen trick we should never have made it.”

“Nonsense,” answered Tony modestly. “One of you would have thought of a way, somehow.”

There was an awkward silence for a moment as it came back to them that one of their number had indeed thought of a way of positioning their ship—but at a doubtful cost.

“We’d better make some measurements,” Chris said to overcome the embarrassment of the moment.

They set to, and with the aid of optical instruments arrived at the conclusion that it would take *Neptune I* five minutes to twist through a complete half-circle.

“Then we shall be able to blast off for home,” Morrey breathed with relief.

“You’re not forgetting that we must go out again and kill the twist, are you?” Chris asked.

What he meant was that now force—in the shape of blasts from Morrey’s and Serge’s jet guns—had been applied to set the ship in motion, it would take an equal and opposite force to stop her in the right direction. Otherwise *Neptune I* would continue the turning movement perpetually.

“Won’t the rocket blast do that?” asked Tony.

“No, I’m afraid our momentum is too great for that,” Chris answered. “If we’d used other means”—and here he smiled a little grimly—“it might have done so.”

“All we have to do then, is to go out and shoot our guns in the other direction,” Morrey said cheerfully.

“Fine. Get back into your suits, Serge and Morrey. I’ll call you when it’s time to fire your jets,” Chris told them.

“Yippee! Who’s for a trip round the Mayflower?” Tony called in a throaty voice.

Now the astronauts were nearing home—just a matter of a mere twenty-eight million miles or so—they felt as gay as if the ship had already landed. Almost as if they were racing from *Neptune I* to join their friends from Control. Sir George would be there. And Whiskers—good old Whiskers. To say nothing of Billy Gillanders and the others. Soon they would be soaking in hot baths, after which they would eat the meal

of their lives. No more space food, that nourishing but uninteresting diet that the astronauts hated.

“Come on, you two. If you’re too late getting out on to the nose, we’ll have to make another complete turn before we’re in position again. So look lively,” Chris told them with mock severity.

With more signs of the gaiety they all felt, Morrey and Serge continued putting on their suits. At last they were ready to enter the airlock. The helmet radios were tested.

“As soon as we’re lined up on Antares”—naming their target star—“I’ll tell you to blast,” Chris told them. “Follow my orders carefully and cut off the instant I tell you. If you give it too much we’ll start turning the other way. Now if that should happen one of you will have to nip pretty smartly over to the other side and give a squirt to steady the ship. Understood?”

Morrey and Serge replied cheerfully that they quite understood. Now they were only waiting for Tony to pass them their re-charged jet guns.

A strange look came over Tony’s face. Without a word he picked up the two guns that Morrey and Serge had brought back with them from their previous excursion. In turn he pressed the triggers. There was barely a puff from either. In their enthusiasm the astronauts had almost emptied them.

“You’ll have to fill them again,” Chris grinned.

“I can’t,” Tony replied in a strangled voice.

A chill struck the astronauts. In a flash the gaiety of a moment before had vanished. They looked at Tony with growing horror.

“Why not, Tony?” Chris asked, struggling to keep his voice as calm as possible.

“Because the oxygen pressure in the storage vessels is too low. Filling the guns once has used up nearly all our spare gas,” Tony replied desperately. “I can’t fill them again.”

“But this third gun is O.K?”asked Morrey.

Tony nodded miserably. It didn't take much to understand that if the force of two guns had been used to set *Neptune I* turning, it would also take the force of two guns to stop it.

And all they had was one gun! Not enough to do the job.

Chapter Twenty

It was the cruellest blow of all. This was a disaster brought on not by bad luck, not by something over which they had no control, but by their own foolishness. If they had stopped to think, they would have used one gun to set the ship in motion, and one to stop it, with the last one held in reserve. Of course it would have taken longer for *Neptune I* to turn around, but that would have been far better than their present hopeless position.

Serge and Morrey felt devastated by the result of their impulsive action. When all had seemed set fair for the homeward run, they had thrown away their last chance. Chris, too, felt that, as leader of the crew, he was to blame. He should not have permitted both guns to be discharged until he'd made sure that there was enough power left to counteract the effect. It was he who had failed his crew—and Uncle George.

Well—it was no use. He must report to Control and confess the greatest error of his life to the man who, more than any other, had made him an astronaut. It was the ultimate failure. He'd let everyone down. Why, oh why, had Tony thought up the idea of re-charging the guns from the oxygen supply? It would have been far better if Chris had carried out his original idea. While the other members of his crew fought their battle against despair, he took the microphone.

What was this? Chris's voice was sounding again over the loudspeaker. Surely it was to say that *Neptune I* had been reversed and was now in position to decelerate? As he was being wheeled into his office, Sir George ordered the girl who was pushing him to stop while he concentrated on listening to the good news.

It was only slowly that he realised what Chris was saying. They had made the ship turn, but now they were unable to stop it.

Chris went on to explain how it had happened and took full responsibility for the disaster. When he had finished a dreadful silence fell on that crowded room and, gradually, all eyes turned on Sir George. The *Neptune* expedition must now be written off, and for the Director this must be the end.

Yet Sir George was being pushed back to the microphone.

“*Neptune I*, this is Control calling. Disregard the past and concentrate on the future. Slow down the turning as much as possible, but keep some energy in reserve. You are to run the atomic motor while turning through fifteen degrees each side of your correct flight path. This will make your overall deceleration about sixty per cent of what it should have been. We will work out the next move. Over.”

Sir George was going to make a last desperate gamble to bring *Neptune I* home. Even if the ship had been pointing in the right direction, it could have been slowed down only just sufficiently. By decelerating over a thirty-degree arc, the motor could be run for only one-twelfth of its time. It looked a hopeless task. But what else was there to do?

How like Uncle George, Chris thought. Not a word of recrimination, only concern for the future. Chris, Morrey and Serge could see what the Director was attempting, and they refused to weigh up their chance of success.

“We could increase the period of deceleration if we slowed the turn while the motor is running,” Chris said thoughtfully.

“How’s that?” Tony asked.

“We’re turning at a steady rate,” explained Chris. “No matter how much we can slow this down, the thirty degree arc represents one-twelfth of a complete revolution. If we do all the slowing down during the thirty degrees, it will increase the time we are in this arc compared with the rest of

the turn.”

“But only while we are still slowing down,” Serge pointed out.

“True,” Chris agreed, “but it will be a worthwhile exercise.”

“Couldn’t we use the chemical motor until we’ve finished braking?” asked Morrey. “It’s so much more powerful than the ion drive.”

“Good idea,” conceded Chris. “We’ll tell Control.”

“At least it shows they are still using their heads,” Sir George pointed out to Whiskers and Mr. Gillanders, after he’d agreed to Chris’s suggestion. None of the three had any illusions about the crew’s chances of survival, but it was good to know that they were still fighting.

“I’ll go out,” Chris decided, ignoring the protests of the others. “I’ll use my gun as you start the chemical motor.”

“Then you’d better see that your safety line right,” Morrey grumbled, “and you’ll have to hang on like grim death.”

Chris was aware of the danger. As the ship slowed down under the thrust of the rocket motor, he would shoot on ahead of it unless he could maintain hold of a hand grip.

Some minutes later he was outside, gun in one hand and the other holding tightly to one of the grips. Morrey was in charge of the rocket firing, and Serge was plotting the ship’s turn.

“In ten seconds,” Tony called over Chris’s helmet radio, and the crew leader braced himself.

A great tongue of flame suddenly leapt from the tail of *Neptune I*. At the same time Chris felt his arm almost torn from its socket. But he managed to hang on and raise his jet gun to fire.

How puny the burst from the little gun seemed when

compared with the gigantic flame from the chemical motor. Yet each was vitally important if Neptune and its crew were to be saved. Chris held down the trigger until he judged that he'd expended about half of the power. Then he concentrated on holding on to the ship until the motor was shut off. It was a great relief to return to the cabin.

There followed a long, tedious operation. The atomic motor was now used during each of the ship's turns. It was switched on as *Neptune I* entered the critical arc, and off again as it turned out. Control was monitoring the results anxiously.

Chris's action had slowed the ship's twist considerably. After much thought Sir George ordered him outside again to use the last ounce of power in his gun. It was going to be a terribly near thing to decelerate the ship sufficiently for it to enter an Earth orbit. Chris complied and then returned to his friends with an empty gun.

The great computer at Cape Kennedy was now the most important piece of equipment in the world. As scientists fed into it masses of data about the happenings on *Neptune I*, the machine printed hundreds of yards of paper tape. Other staff were studying the tape and interpreting the computer's findings. Sir George read their reports feverishly.

"We'll do it!" he announced triumphantly.

"It's hopeless!" he groaned a moment later. And so it fluctuated.

As hour followed hour, *Neptune I*, still turning slowly, was approaching the Earth. Soon the critical point would be reached when they would know definitely whether the ship would ever get into orbit or whether those four young men would be carried away into space. The staff almost forgot to breathe as they watched Sir George.

Suddenly he jerked upright in his wheel chair.

"Launch the *Ariel*," he snapped.

So there was a chance! *Ariel* was the rescue ship on

constant standby at the Cape. It was a fleet little vessel that had more than once snatched astronauts from ships out of control. Sir George wouldn't be ordering it to take off unless he thought there was a possibility of its fulfilling its task. Though his body was feverish and weak, his mind was working with its former precision and efficiency. He took the decision to launch *Ariel* because he'd realised, long before any of his colleagues in Control, that *Neptune I* would never brake sufficiently to allow itself to be captured by the pull of Earth. So the rescue ship must chase after it before it went shooting past into space.

"We're sending *Ariel* up after you," Sir George called over the radio. "She should sight you in half an hour."

The astronauts heard the message and knew what it meant. It would have been great to put the old ship down under its own power, but this was obviously impossible. Chris hated to abandon ship, but those were his orders and he set about his preparations.

There was nothing much to show for this unhappy voyage to Neptune except a few reels of tape, and these he packed carefully away, ready for the transfer. Morrey had worked out that they were now less than a million miles from Earth's orbit and were rapidly overtaking it.

"I wonder how close we shall get?" murmured Tony.

"*Ariel* is on its way," came the message from Control, in the well-known voice of Whiskers.

Only a few seconds now passed between message and answer, for the radio time lag had almost disappeared. So it was easier to chat up old Whiskers than when they had to wait hours for a reply. Then, for the last time, they set the chemical motor to work during the slow turn through the critical arc. It was just before the full arc had been completed that the last pound of fuel was burned and the motor went dead.

"At least we haven't wasted any gas," Morrey observed wryly, as he and the others began to put on their space-suits.

Even before they had finished Whiskers told them that *Ariel* reported having them on its radar screen. The rescue ship would now lock on to the signal reflected from its quarry and would be intercepting in just over five minutes.

“Take a last look round the old ship,” Chris said to his companions, as they waited to fasten their helmets.

“Can’t say I’m sorry to see the back of her,” Tony ventured, and, silently, Chris had to agree. This had been the most unfortunate command he’d had. Yet, somehow, he didn’t like letting *Neptune I* face her fate alone.

“*Ariel* to *Neptune I*,” a new voice broke in. “We’re closing in on you. When we’re alongside we’ll give ourselves a twist to match yours. It will make transfer much easier.”

“Thanks, *Ariel*. Are we glad to see you!” Tony replied, for he was nearest the microphone.

Serge was at the observation port, and it wasn’t long before he called out that he’d spotted their rescuer. A shining point of light was rapidly growing in size and soon he made out the rescue ship before *Neptune I*’s motion took it out of his sight.

“Here we are then,” the voice of *Ariel*’s pilot announced cheerfully. “I’m moving in to about twelve feet of you. Think you can jump that gap?”

“Of course,” Tony called back indignantly. “What do you think we are?”

“All right,” the voice laughed back, “but don’t forget you haven’t any guns. Shall I send you a line across?”

“We’ll manage,” Tony answered grimly.

One at a time the *Neptune*’s crew entered the airlock. As they opened the outer door they could see the welcome sight of the rescue ship coasting alongside. Because *Ariel*’s pilot had exactly matched the movement of the doomed ship, both vessels appeared to be motionless. Only the slow movement of the star field reminded them that they were still rolling

over on their headlong course.

Tony, Morrey and Serge made their leaps across the void and, in turn, passed through the *Ariel's* airlock to safety. Now it was Chris who must make the jump. He hung clinging to the casing of his ship. He could not have analysed his feelings at that moment. Regret, disappointment and relief were all confused. With a final pat for *Neptune I*, he sprang into space and floated across to the rescue ship's airlock.

It seemed incredible, after all they had been through, to find themselves safely back at Cape Kennedy. The "cooling-off" time before the hatch could be opened seemed endless, but at last they were able to scramble out and breathe Earth's sweet atmosphere in great gulps. They were strangely silent as a jeep sped them to the Control building.

There was Whiskers. There was Mr. Gillanders, Professor Boronoff, Doctor Rosenberg and a score more of their friends waiting outside the main entrance. As the jeep drew nearer Chris and his crew could see the frantic wavings and hear the rolling cheers. They stood up and waved back vigorously.

But where was Uncle George? It was incredible that he should go off duty just as they touched down. They couldn't imagine him waiting patiently in his office for them to report. Had anything happened?

They poured out of the jeep and were immediately immersed in a flood of excited people. Everyone from the Base, it seemed, was there to welcome them. Ferocious hoards of press men fought jubilant scientists to get nearer. It was four breathless young men who at last managed to find refuge in Control.

"Where is he?" Chris managed to pant.

"Er—he's not been well," Whiskers tried to explain. "He'll be along in a minute."

The crew couldn't believe that the frail figure that was being pushed towards them in a wheel chair could be Sir

George Benson. But it was, and they rushed to meet him.

What could they say? Words couldn't express their feelings at that moment. It took two-handed clasps and long silent looks to convey to each other how they felt.

It was a week later that Sir George Benson announced his retirement as Director of UNEXA. Though the return of his friends had been a wonderful tonic for him, he'd had his warning. Like a wise man, he preferred to hand over before his powers began to fail him. Especially as Mr. Gillanders was appointed his successor.

Sir George smiled indulgently as the young people danced at the party he'd given to mark his gratitude to his ex-colleagues. Chris, Morrey, Serge and Tony spent almost as much time round their old friend's chair as they did propelling partners through that happy throng. Mr. Gillanders sometimes joined them and Whiskers was there too. The ex-Director spoke quietly.

"It's been a wonderful partnership," he said with evident feeling, "but now I can sit back and watch from the sidelines."

"Don't think you're running away from everything," Billy Gillanders warned him. "I shall want a great deal of your help and advice."

Sir George looked at his successor gratefully. He'd certainly like to be kept in the picture, and for some time they all talked happily together.

"Of course I shall want a deputy," Mr. Gillanders broke in. "Who he'll be hasn't been decided, though I know whom I'd like."

As his words sank in, all eyes were turned in one direction. Chris found himself blushing furiously—a thing he hadn't done for years. Yes, they were looking at him. He should have been proud, of course. But was he? Was it worth while being recommended for this marvellous appointment if it meant the end of his journeys in space?

He must take a long, long time before he made up his mind.

Faber Fanfares

NEARLY NEPTUNE

Hugh Walters

"Chris Godfrey and his three companions were dead!"
So begins *Nearly Neptune*,
as we learn in flashback of the fire that
badly damages the ship, and its apparent break-up,
monitored by radar from Earth.

Needless to say, our four friends have
not perished, but it seems impossible for them to
make it back to Earth when the hypothermia
equipment has been irreparably damaged...

Cover design by Leslie Wood



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