



 The Baxterium

## *Prospero One*

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In the minutes before launch, Doctor Geoff Lighthill heard the whine of the elevator gantry leaning away from the booster stack, and the clatter of power and propellant umbilicals popping out of their sockets in the [Blue Streak](#)'s metal flanks.

The pressure cabin of the Prospero was an aluminium box the size of a small car. There was barely room, in this little cone, for the two of them - Lighthill and his commander, [Roly Gough](#) - lying side by side in their contoured couches, cocooned in their bulky white pressure suits.

The walls around Lighthill were coated with switches, circuit breakers and dials. In his months of training at [Stevenage](#), he'd come to learn the meaning and function of every one of those switches. And he knew every step of the mission ahead of him. He felt as if he was a cog in some immense machine, that would work through its predestined sequence of steps, regardless of the spark of consciousness cradled inside his skull...

It was Friday, April 26th, 1974; today, Britain was launching its first astronauts to orbit.

And its last.

Flight director Josh Morris stood at his workstation, scanning the Operations Room.

Morris's controllers were working smoothly through their countdown procedures. There were 20 of them, all in ties and shirtsleeves. Their accents - cultured British, or crisp Australian from the de Havilland contractors who had built the launch facilities - permeated this stuffy box, here in the middle of the Australian desert.



Compared to the jargon-ridden verbal pyrotechnics that typified US launch procedures, this was typically British, he thought.

Big TV monitors showed the public feeds. The BBC coverage was reaching its climax; in a lashed-up studio elsewhere in the Woomera complex, [James Burke](#), [Patrick Moore](#), [Arthur C Clarke](#) and [Joe Muldoon](#), the Apollo Moonwalker; were staring intently at monitors. The Brits looked a little absurd in their light tropical-style suits. Another live feed showed a small band of Aboriginal protesters, at the security gate of the complex. The military police faced the protesters now, a calm, solid line; the Aborigines werenât a problem for today, and anyhow, they would get their land back once Woomera was dismantled, after this mission.

Right now, Josh Morris found it hard to care about the plight of Aborigines.

Restless, he looked out, over the heads of his controllers, through the big picture window at the side of the Operations Room.

Launch Complex 6D stood on an escarpment overlooking a dry lake, all of three miles away, isolated save for the gleaming shells of lox tanks. The Woomera facilities were still crude compared to Canaveral, where heâd trained with the Americans for this mission; the launch stand was not much more than a metal platform, with a single gaunt gantry rising alongside the booster itself.

The [Black Prince III](#), exposed, looked like a complex toy set against the huge tan expanse of the desert.

The Blue Streak boosters were five squat, silvery cylinders, four of them strapped together around a stretched core stage; he could see the flaring nozzles of each boosterâs twin Rolls Royce RZ-2 rocket engines, and the shine of ice coating the lox tanks. The boosters bright, striped paintwork was vivid. Above the lower stages rose the Black Knight IV - the squat, [kerosene-and-peroxide](#) powered upper stage - and then the cylinder-cone shape of Prospero itself, with the stubby launch escape tower above that.

Around the launch stand stretched the red-brown surface of the South Australian desert. The gibber stone - sun-baked earth covered in sharp, slate-like rocks - was flat, brown, lifeless save for salt bushes and clumps of dark green, spiny grass. It was, Morris thought, like a slab of the surface of Venus, transposed beneath the huge blue sky of Earth.

Lox vapour swirled around the Blue Streaks, dispersing quickly.

In a few weeks, when the flight was done, his assignment here would be over. He was on sabbatical from the Royal Aircraft Establishment at Farnborough; he would have to pack up and go home, leaving behind all this - the pure light, the elemental landscape, the electric blue sky - for the stultifying green of Hampshire.



The last time heâd gone home had been the middle of winter. Britain had been on a three-day week, because of striking miners; the whole country seemed huddled, cramped and cold. Going back would be claustrophobic, hard to take. But Britain wasnât going anywhere else in space; there was nothing else for him to do.

The countdown, orderly and controlled, reached its final minute.

In 1945, Roly Gough had been 19 years old. He had missed out on the war; because he was born too late.

He had built up a career as a test pilot, but that had almost been scuppered in 1964 when he had worked as the lead pilot on the [TSR-2](#), which got itself cancelled by Harold Wilson.

Space had beckoned. But as Britainâs aerospace programme had limped through the 1960s, suffering endless cuts and delays, it had started to look to Gough as if he had been born too bloody *early*.

But now, unlikely as it seemed, here he was, with this one chance to reach orbit. And as far as Gough was concerned, as soon as the blue touch paper had been lit on this firework under him, nothing was going to stand in his way.

The clock reached ten, nine, eight...

Wing Commander Roly Gough closed his eyes.

Four, three.

Morris felt his heart thump, hard.

Two seconds before launch, eight main engines ignited. There was a flare of brilliant white light. Smoke, white but tinged with red Australian dust, billowed out to left and right of the booster stack, blasting out into a ravine towards the Lake Hart Saltbed. In this desert, there could be no fancy water-cooling system of the type employed at Kennedy; instead, the flame buckets were lined with big fire-bricks, bolted down beneath that massive blast.

So it had begun.

At least, Morris thought with a surge of savage anger; I got this far. At least they can't take this away.

Today, there would be fire across the desert. And Morris would control it.



The count reached zero.

When the hold-down bolts exploded, Lighthill felt the ship jerk under him. At first there was vibration but no acceleration; he knew that the rocket had left the ground and was in momentary stasis, burning kerosene and peroxide, balanced on its thrust.

Already, he had left Earth.

Itâs happening, Lighthill thought, exultant. The Yanks have been to the Moon and back, and now theyâre heading for Mars. But so what? Right here, right now, Britain is finally putting men into space.

And Iâm one of them.

He could hear the Operations Room speaking to them, but could make out no words.

Now the rocketsâ roar engulfed him. Acceleration settled on his chest, mounting rapidly.

He felt the booster pitch over as it climbed. Prospero One was arcing slowly over to the north-east, tilting into the trajectory for its [53-degree orbit](#). Inclined enough to permit the all-important Sunday supplement pictures of Britain from space...

He tried to stop analysing. He wanted simply to exist, to be in the mouth of this extraordinary moment, this huge outpouring of energy.

The cabin shook around him, loose equipment rattling.

T plus a hundred and forty seconds. Core ignition, called Woomera; there was another tremor as the core Blue Streak shuddered into life, and the acceleration piled higher.

Then came a clatter of explosive bolts, a dip in the acceleration. Staging: the four strap-on liquid rocket boosters had been discarded.

Roly Gough was already more than 30 miles high, already in space.

Now the main core of the Black Prince burned under him, and as the mass of the ship decreased the acceleration built up. The acceleration felt savage; the Blue Streak heart of the launcher had, after all, been designed as an ICBM, not as a man-rated booster, and even the weight of its payload seemed barely to hold it back.



The cabin started to rattle, juddering back and forth. Some minor flaw in the core stage was feeding in fuel or oxidiser incorrectly; the booster was chugging and popping.

Testing fighters, he had pulled more G than this before-and that had been sitting up, not lying in a contoured couch. But that had been for a few seconds, not minutes on end.

Lighthill, next to him, was muttering: "Bloody hell, bloody hell, bloody hell..."

The chugging smoothed away, leaving a steady pressure on his chest.

Then came a loud bang, right outside the cabin's hull, as the escape tower streaked away, hauling the protective shroud with it. The blue light of Earth flooded the cabin. He could see fragments of ice, shaken free of the hull of the booster; they glittered briefly.

The pressure mounted still further as the core Blue Streak burned the last of its propellant. Then there was a jerk forward, a sudden surge of weightlessness; Gough was hurled forward against his restraints. He heard rattles as the main booster core was discarded, and the clatter of the Siskins, the solid propellant separation rockets, which kicked the final apogee stage forward, settling the propellants in their tanks.

At last he felt the crisp surge of the apogee stage's six [Gamma 304s](#), cutting in for the final and relatively gentle push into orbit. He was thrust back into his seat. The acceleration was light and smooth: good Hawker Siddeley engineering, he thought.

Through the small triangle of tough silica glass before him, he could see the skin of Earth, spread out like a glowing carpet: there was the wrinkled, unmistakeable profile of New Guinea, and the sea in the Gulf of Carpentaria was as bright as a tropical sky.

Then, right on cue, the apogee stage cut out.

"Bugger," whispered Roly Gough.

Guy Briggs followed the launch on TV, in Bill Maclaurin's office at Stevenage.

In the heart of the screen, blurred and excessively magnified, the Black Prince was finally lost against the glare of cobalt-blue Aussie sky. The BBC cut away to their Woomera studio, where Burke, Moore and Clarke were gushing excitedly. They seemed to be talking an awful lot about the British Interplanetary Society. [Raymond Baxter](#) joined them now, intoning well-rehearsed words about the antique days when he'd known Roly Gough as a



test pilot flying Hunters and Lightnings.

Bill Maclaurin got up and waddled over to the set. He was a comfortable, portly man, his face pocked by the exploded capillaries of the habitual drinker. Maclaurin, BAC's project manager for Black Prince, was nominally a dotted-line report into Briggs; Briggs, with overall responsibility for the Black Prince-Prospero programme, was a civil servant, reporting into the Ministry of Trade and Industry. As of March 6th - when Wilson was re-elected - Briggs's political boss was [Anthony Wedgewood Benn](#).

Briggs spent much of his working life in London. But he'd had no doubt that this was the right place to be, today.

He thought back over all the other Blue Streak and Black Prince test firings he'd followed. Even off duty in his digs up at the hot-firing test facility at [Spadeadam](#), he used to hear the windows rattle during a test fire; he would sit with his landlady and their bloody cat, counting through each firing. A launch sounded different: the low level rumble and roar close to the ground, and then the high-altitude crackle as acoustic shocks from the engines rained over the green Northumberland moor...

Maclaurin switched to ITV, but when the smug face of [David Frost](#) peered out at him he turned the set off. He opened a steel filing cabinet and pulled out two chipped tumblers and a half-empty bottle of Glenlivet; he poured two healthy measures.

Briggs took the drink. "Here's to you, Bill, you old bugger." He rolled the clear, sharp liquid over his tongue.

"End of an era, Guy," Maclaurin said. "Two Brits in orbit, our first astronauts. But it's an end of an era all the same. It's TSR-2 all over again. Harold bloody Wilson. Gives in to the miners on day one, shuts down the space programme on day two." Maclaurin knocked back his drink, and poured himself another.

Briggs declined.

They took their glasses to the window-wall of Maclaurin's office. From here they looked down over the big, brightly-lit plant at the heart of BAC Space Division's Stevenage facility, where the Blue Streak tank bay and airframe structures were manufactured. The plant was now deserted, the jibs and presses and power tools idle under the pitched roof's skylights. The half-finished rocket structures, lying on their sides in their handling frames, looked, Briggs mused, like the corpses of dinosaurs laid out in some museum.

"But you have to look at the bigger picture," Briggs said. "You wouldn't believe the pressure the Americans have brought on us. They just won't accept the competition for their own launch capabilities."

"Pressure, sure. They've bought us off; with a promise for a berth for one of our boys on [Skylab A, or the Moonlab](#). I tell you this, though. They sure



won't be taking us to Mars with them... But it's the timing, Guy. The bloody timing that hits you, right in the gut."

Briggs felt vaguely ashamed. "I'm sorry, Bill."

Maclaurin's face worked. "At least we got this far. And we had some bloody good times, didn't we?" He raised his glass to the deserted plant.

Lighthill unlatched his helmet and cautiously raised it over his head. He smelled the fresher air of the cabin, heard the busy hum of the environmental systems pumps and fans.

He pulled back his hands and watched the helmet tumble slowly, weightless, in the little space before his chest.

My God, he thought. My God.

Roly Gough already had his helmet off. His head, protruding from the neck of the pressure suit, was like a steel cylinder, with its grizzled crewcut and bull neck. "Feeling okay?"

Lighthill turned his head with deliberate slowness. "Better than I expected." Avoid sudden head movements, the NASA astronauts had advised; so far it seemed to be working, although the drug patch on his neck must be helping.

Gough was already working through his flight plan's list of tasks and checks.

Lighthill fumbled in his shin pocket and extracted his own thick ringbound checklist, then set to work with his assigned litany of switch-pushing and dial-reading.

There was no real sense of speed. He was in silence, now, apart from the humming of the cabin's instruments, the gruff voice of Gough, the rustle of paper, the hissing crackle of the capcom's voice.

It was hard to concentrate.

Earthlight slid across his lap and shimmered from the banks of switches, as if the cabin was some underwater jewelled cave.

If he looked ahead he could see the planet's curve, a blue-white arc framed by black space. And there was a slice of pale blue seascape, with an island an irregular patch of grey and brown in the middle of it, and clouds scattered over the top, lightly, like icing sugar.

He was an Englishman, in orbit, aboard a British-built, British-launched spacecraft. He felt a surge of patriotic pride, unexpected and embarrassing.



Gough folded away his plan. "Looks okay down my end. And yours?"

Lighthill focused, and hurried through the rest of his list.

His flight plan listed the steps needed to bring air, light and power to the Observation Module, the short cylinder sandwiched between the Entry Module and the Propulsion Module. Lighthill was an atmospheric scientist on sabbatical from the [Met Office at Bracknell](#). Once through the hatch in the heatshield below them, he would be calling the shots for the next two weeks, running the cameras, radars and telescopes that were the *raison d'etre* of the mission.

He got to the point where the twin solar cell panels should be unfolded from the flanks of the Observation Module.

".. [Minus Y Array](#) - deployment confirmed. Plus Y Array -"

The deploy light stayed red.

He stopped.

Gough looked across sharply.

From the ground telemetry it looked, immediately, as if the plus Y solar array had got stuck. At the first hint of a problem, all of Josh Morris's euphoria at achieving orbit evaporated. He listened anxiously to the dialogue between Lighthill, in orbit, and the controllers here at Woomera.

"The positive Y array deploy switch's backlighting is still red," Lighthill was saying.

"Understood." The capcom was Bob Nash, an astronaut trainee who had served as backup to Lighthill. "Prospero, Woomera. What about the negative Y switch?"

"Gone to green."

"Copied, Prospero."

"Woomera, Prospero. I don't think we can have a telemetry problem here. Looks like a genuine gremlin on the starboard array."

Morris knew Lighthill was probably correct. He checked the fat, bound flight plan on the desk before him, looking for options. "Capcom, tell him to recycle."

Lighthill would push the button again, and wait for the red glow to change to





green.

"Bugger," Gough called softly.

No green light.

"You can't say 'bugger' on the BBC, Roly," Nash said weakly.

"Tell them to start [contingency OPA3C](#), capcom," Morris said. That was the sub-procedure for diagnosing the non-deployment of an array.

"... Josh, this is Electronics." The electronics controller was a subcontractor from Marconi.

"Go ahead."

"They're working through OPA3C. I'm seeing a nice 60 volts off the neg array, but absolutely nothing off the positive. Microswitches indicate that the array is unlatched, but not at full extension. I'd say that it's jammed in the stowed condition. In fact we ought to get them to cut the array deployment motor before it burns out."

"Did you get that, capcom?"

"Yes, Josh. I'll tell them."

Electronics said, "Josh, the best we can do is to look at the telemetry from the drive motor and see if anything sticks out as the cause."

"And how long will that take?"

Morris could see Electronics shrug his broad, fat-laden shoulders.

The answer didn't really matter; Morris knew.

The Prospero was a cut-price spacecraft, capable of sustaining two crew in orbit for a fortnight. The entry capsule, which the crew were riding to orbit, looked a little like the Americans' Gemini - which had first flown nine years before - but it was much cruder, designed only to sustain its crew for a few hours before they transferred to the compact Observation Module beneath it.

Right now, 30 feet behind Lighthill and Gough, the Propulsion Module's battery packs were slowly draining their power into Prospero's life systems. Unless recharged by the solar arrays within a few hours, they would drop below the critical margin at which an early return would be mandatory.

And it was surely going to take more than a few hours to diagnose and fix the solar array problem.



"...Damn," Morris said. "Damn, damn."

He tried to focus.

He spoke on the open loop to all his controllers. "I think you all understand the situation. Electronics, I want you to keep working on that solar array problem. In the meantime, we're looking at a reduced mission. Environment, give me a prediction on how long they can stay up there with just one array."

"Already working on it, Josh." [Mitch Clapp](#) was the Australian spacecraft engineer responsible for Prospero's life-support systems; his voice was calm, competent, reassuring.

"Trajectory, start working on reentry profiles. Recovery, work with him on splashdown points."

"Understood, Josh."

"Flight Activities, start pulling together the reentry checklist. And compile some kind of schedule for what they can achieve before we have to bring them down. Medical tests, observation from the cabin... We ought to get every ounce of value out of this mission while we can."

"Roger."

"We still have a job to do; we still have two men in orbit. Capcom, inform the crew."

With that, Morris turned off the loop. He picked up the red phone that would connect him to Stevenage, and Guy Briggs.

The state of the cabin showed they were getting a little more adapted to zero-g, Lighthill thought. The spare spaces on the walls were peppered, already, with pens and pads and checklists and other small bits of kit, stuck there by Velcro.

In this dreamlike environment, it was somehow hard to become agitated by the problems: to imagine the frantic activity at Woomera, the Clarke-relayed phone calls buzzing back and forth to England.

Roly Gough wasn't so relaxed, though. He was taking a leak, which involved jamming a condom-shaped urine collector up against his crotch. "Four hours. Four bloody hours for a stuck array to magically fix itself, otherwise we're in line for a short trip home. What a waste. What a bloody, buggering waste."

"Roly -"

"What?"



Lighthill hesitated. "Take it easy. We've achieved orbit, and the chances are we're going to make it home. Operationally the mission's already been a success. This snafu with the array has scuppered the science experiments, not the operational side... What I'm saying is that it's my mission that's lost, not yours."

"And you're happy with that, are you? You're content that we should draw a few cc's of blood out of each other's arses, and fall down home like two grinning idiots?"

"What choice do we have? We don't have our solar array."

"No. *But we could fix it.* No array problem, no mission limit."

Suddenly the cabin seemed claustrophobically small. "Are you talking about going outside? You can't be serious. This isn't a bloody [Lightning](#). What are you going to do, go out there and kick the array?"

"That might be all it needs."

Lighthill felt irritation rise, mingled with fear. "For God's sake, we haven't rehearsed this. What happened to the mission rules?"

Gough pointed an accusatory finger at Lighthill. "Look, I'm not going to blow my one mission without a fight. I know the score. You'll be on Skylab A within a couple of years anyhow -"

"Damn right." As far as Lighthill was concerned, that promise for the future was another compelling reason not to risk his neck, now.

But, he knew, the invitation didn't extend to fly-boys like Roly.

"That's not the point," he said.

"Then what is?"

A shaft of blue Earthlight swung through the cabin, illuminating the floating pages of Lighthill's checklist. He thought of Gough going out there, into that silent, blue-lit infinity.

"Roly -"

"What, damn it?"

"You're too *old*."

Gough glowered at him, for long seconds. Then he said, "I'm putting it to Woomera. If I can sway them, I'm going out."



Blue Streak's development had begun in the mid-1950s, as an independent ICBM force. It was a different age, back then, Briggs thought.

After the war, Britain was poor. But nevertheless it had gone ahead with ambitious programmes of development in aircraft, nuclear weapons, space rockets: the symbols of a power on the world stage. But there was a problem.

Blue Streak was a liquid propellant rocket. It took 30 minutes to prepare for flight - much longer than the four minutes' warning available if Soviet ICBMs were ever fired in anger.

So, in 1960, Blue Streak was cancelled as the national deterrent, and the Government started buying in the submarine-launched Polaris from the Americans. And pressure started to build up from the Europeans to join in a joint advanced booster development, perhaps based on [Blue Streaks with French and German upper stages](#).

Flying rockets by committee.

But then, in 1964, everything had changed, when [former President Kennedy](#) came to visit.

Kennedy - forced to retire after the failed assassination attempt that crippled him - had chosen Britain for his first private overseas visit. He had addressed the combined Houses of Parliament, and his clipped, weakened voice had spoken of brotherhood and pride: of nations rising into space, from all over the globe, like birds rising from the branches of a tree...

After that, even the incoming Labour Government in 1964 - which had dismantled the TSR-2 strike aircraft amid its cull of aerospace projects - had not been able to justify closing down Blue Streak.

The Polaris order was cancelled. The booster programme was expanded, and Blue Streak was reinstated as the national deterrent. Now there were a lot of boosters available for a peripheral space programme to play with.

And so Britain placed a satellite in orbit by the end of 1964.

Through the rest of the decade momentum had continued to build, towards - it seemed inevitably - an independent manned programme...

Sometimes Briggs thought he had spent too long in Whitehall. He knew the incoming Labour politicians thought all this space stuff was a silly fantasy, selfishly pursued by technocratic types like Bill Maclaurin, with their dreams of beautiful machines. Britain had to learn to live within its means, they said. The Labour government thought there was no realistic choice but to shut the programme down.



But the technocrats said the Government had no conception of the value of technology, and technologists.

Briggs was no longer sure who was right.

In any event, space would soon be gone, and the government could get on with its main job, which was to anaesthetize the nation into accepting its own long term decline...

And now, he had to think about Roly Gough.

"I wish I hadn't had that damn whisky," he said.

"What do you think?" Maclaurin asked.

"I don't know," he said irritably. "I don't know what I think, Bill. Morris is recommending against the EVA. Of course."

"Well, Roly put in a fair bit of water tank time at Houston -"

"He's a rookie astronaut, Bill. He's no Moonwalker."

Maclaurin grunted. "No," he said, his Edinburgh burr soft. "He is Wing Commander Roly Gough, AFC."

"An AFC preparing for a gung-ho stunt. Roly's a headstrong fool. This is typical of him."

Another phone rang on Maclaurin's desk; he picked it up and listened. He replaced the set. "That was Hatfield. The inspectors have arrived." The inspectors, from Briggs's own department, were being sent in to ensure the shut-down of the project. "They're burning the blueprints, Guy," Maclaurin said. He laughed harshly. "The bloody timing. It's TSR-2 all over again. [A blueprint bonfire in the middle of the car park.](#)"

We can't finish like this, Briggs thought.

He picked up the phone, to speak to Josh Morris at Woomera.

Lighthill locked his helmet into place, snapping closed the ring at his neck. His own pulse sounded noisily in his ears.

Because the Entry Module had no airlock, Lighthill was going to have to sit in vacuum in the opened cabin.

Gough opened a covered switch marked DEPRESS, and turned it.



There was a hiss of air, which quickly died. The busy mechanical sounds of the cabin's systems disappeared, leaving Lighthill with only the scratch of his own breathing, the soft rush of oxygen across his face. He felt the suit fabric stiffening around him. When he lifted an arm, he could feel tough resistance from the inflated suit.

This EVA, he realized anew, would be no cakewalk, even for a young, fit, trained astronaut.

Gough unbuckled his restraints. He pulled himself awkwardly to the main hatch and turned the heavy locking handle. Lighthill thought he could hear the gasping escape of the last few millibars of oxygen.

The hatch swung back, and hard-edged Earthlight flooded the cabin.

Gough grunted. He hung for a few seconds, half in and half out, the light eclipsed by his bulk. Then his legs drifted away from the hatch, and his wrist-thick umbilical twisted out into space.

The wrinkled surface of Earth's world-ocean, strewn with the shadows of scattered clouds, slid past the round hatchway, its light flooding the cabin and glimmering from Lighthill's faceplate.

For Roly Gough, it was like a leap into the future.

He drifted 50 feet, to the limit of his gold-coloured beta-cloth tether. He found he could somersault, and float lazily on his back. It was so bright, with the diffuse glow of Earth enveloping him, that he could see no stars; the sky looked utterly black, far darker than even the deep blue of the stratosphere he'd seen when pushing Lightnings to the top of arcing parabolic climbs.

Earth was extraordinarily beautiful. The detail was astonishing, even with his ageing eyes, better than from an aircraft at 40,000 feet: he could see the outlines of cities, roads, grey against the brown-green land; over sea, he could see the wakes of ships.

His suit was a warm, comfortable bubble around him. The sense of space, of openness, was startling.

When he tugged the tether, he drifted easily towards the fusion-welded titanium hull of the re-entry capsule; he could see into the cosy pit of the cabin, Lighthill sitting there watching him, snapping photographs with a handheld Pentax. The spacecraft looked like a glittering model, brilliantly illuminated. The Union Flags on its side were sharp and clear. For a second his pride stirred, and he remembered why he'd come out here.

"Bloody marvellous," Roly Gough said.



"I believe you, Roly."

"All right. Let's go see that bally solar array."

There were tether rings fixed to short restraints on his suit. Now he began to work towards the stuck array, using his rings to negotiate, one by one, tether points on the hull.

With his gloved hands he tried to grip at the sleek surface of the Observation Module's hull, but in the absence of rails or rungs, his hands slipped away. And if he pushed too hard, he just floated away from the hull.

Gough could hear his own breathing, laboured already. "Strange world out here, Geoff. I feel like Bambi on the bloody frozen pond."

"Take a rest."

"The Americans weren't kidding - everything is about three times as hard as it feels it should be..."

Fog was collecting inside his helmet visor, and freezing there; he must be overworking the cabin supply, which was straining to pump oxygen through the umbilical to his suit, and scrub out the moisture from his body. It was bizarre: he was too hot, yet almost blinded by frost.

Doggedly, he worked his way down the stack, resting at intervals, as long as he needed to clear his faceplate.

At last he reached the base of the stuck solar array. It looked like a moth's wing, folded against the side of the Propulsion Module, its silvery solar cells shimmering. He tethered himself once more.

"I'm looking at the array now. It looks like the aft restraint tether hasn't cut - the [pyro guillotine](#) can't have fired. Motor will have tripped out under the strain. So if I can free it the whole thing should deploy."

"All right, Roly."

He unsheathed a knife from the toolkit at his belt, braced himself over the stowed array, and began to saw through the thin aluminium tether.

Soon his visor was fogged up once more. No matter; it was sufficient now that he could feel the tether. "It's coming... a few more seconds and I'll be through. Geoff, are you standing by to deploy this bugger?"

"Yes. Are you going to be clear?"

"Even if it clouts me I'm tethered."



"Roly." It was the capcom. "Are you all right? We're reading your heartbeat at a hundred and eighty."

"I'm fine," he growled. "Just a little fogged, that's all."

"Roly, you must -"

Suddenly the strap parted.

The solar array began to unfold, a spring-loaded wing, heading straight for him. Gough, startled, lost his grip, and tumbled away from the hull.

Lighthill heard Gough cry out, and then swear; his voice a throaty rasp.

He began to fumble with his harness. "Roly? Whats happening?"

"Stop the deploy."

"What?"

"My tether's caught in the outer panel hinge. It's taking me with it as it comes out. Buggery... Geoff, stop the deploy."

Lighthill punched the cut-off circuit breaker on the panel before him.

More laboured breathing. "Now I really am fogged up. I'm coming back as soon as I've freed the umbilical."

"Hang on - are you sure -"

The Master Caution alarm went off. Half a dozen red lights lit up on the environment control system panel before Lighthill.

"...My mouth's dry," Gough was saying on the air-to-ground loop. "This bloody oxygen..."

"Josh, this is Environment. He has a leak. I'm seeing no oh-two pressure. And it looks like he's lost coolant."

The capcom said, "Roly, this is Woomera. Tell me what you see. Can you see a leak?"

"Ah - it looks like I'm in a cloud of something. Hard to tell what's out there and what's fog on my visor..."





Morris felt paralysed. It was as if the mission were dissolving around him, as if there was nothing he could do or say to stop the disintegration.

"...He should go onto reserve," Clapp said.

"Say again?"

"Put him on reserve, Josh."

I should have thought of that. And so should Roly.

"Capcom -"

"Roly, switch to reserve."

"On to reserve. Yes. On to reserve."

Gough would switch to the small personal oxygen supply in his chest pack. Now, Morris thought, all he had to do was free himself and get back to the Entry Module before his oh-two gave out...

"My umbilical's still caught on the array," Gough said. His voice sounded calmer to Lighthill. "I'm going to unplug it - it's no damn use now."

Lighthill tried to think it through. "Roly - if you unplug you'll lose your comms. And you'll have no tether." Christ, he thought. He won't make it.

Lighthill took a deep breath. "I'm coming out to get you. We can tie ourselves together and share my umbilical."

"Stay put. You've got scarcely any EVA training... if you went pear-shaped you'd just put us both at risk. I'll be back in a few minutes."

"Roly, wait. I -"

There was a click on the intercom, followed by a hiss of static.

"I've lost Roly, I say again, I see no telemetry from Rely."

Morris's heart lurched at Clapp's words.

He's done it; he's unplugged the umbilical.

"How long has he got on suit air?"

"Fifteen minutes nominal. More like ten the way he was breathing. And remember; he's lost cooling."



It had taken Gough half an hour to get to the array, and he had fogged up then, even with suit cooling. To get back, blind, in a third of that...

Mitch Clapp shook his head. "It's not feasible, Josh."

Morris drew breath. There was nothing left for him to say.

Lighthill unlatched his harness, and let himself drift up out of the seat. It was the first time he'd been out of the restraints since reaching orbit, and, for a brief second - in spite of everything - he felt an extraordinary exhilaration.

He checked his own umbilical attachment, and rested his feet on Gough's seat. He stood up awkwardly, his head protruding from the hatch.

Earth hung above his head, bulging and pregnant. Prospero was crossing the equator. There were storm clouds above him, thunderheads which piled up on top of each other like solid things, cliffs and ravines of cloud miles deep, as if reaching down towards him. He had none of the sense of the fragility of the planet which Apollo astronauts had reported; Earth seemed huge to him, overwhelming, crushing.

He looked back along the length of Prospero One. His view was obscured by the conical geometry of the Entry Module, but he could see, foreshortened, the cylindrical flanks of the Observation and Propulsion Modules. The port solar array, fully deployed, was a rectangle coated with big black photovoltaic cells. The starboard array was partly deployed, still folded like a concertina.

Gough was about 20 feet away, half way along the starboard array. He was floating there, his oversuit grey-white in the Earthlight; he looked like a human-shaped balloon. He was surrounded by a halo of ice crystals from the ruptured coolant line. He was pulling himself hand-over-hand along his disconnected umbilical, which Lighthill could see was stretched almost taut from the hatch to where it had snagged on one of the starboard array hinge points.

He was struggling, Lighthill saw. Gough's grip seemed weak, and his legs flailed as he moved, awkward and useless; every few seconds he was forced to rest, and Lighthill imagined he could hear his strained breathing.

Lighthill waited, as Gough approached.

Gough's painful journey across space - here at the climax of this flawed, shut-down programme - was as magnificent, Lighthill realized suddenly. As epic and futile as Captain Scott slogging to the South Pole. Quintessentially British -

Suddenly Roly's umbilical came free of the starboard array.



The cable retracted towards the hatch, like elastic, hauling Gough with it.

Unbalanced, Gough tumbled over. Just before hitting the spacecraft hull, he put his hands out, evidently to break the impact.

He let go of the umbilical.

Gough caromed off the hull and bounced away, tumbling, his limbs flailing weakly. He grabbed for the drifting umbilical, but missed it.

Lighthill prepared himself to leap after Gough, but already the distance was further than his own umbilical would stretch.

In seconds Gough was floating out of Prospero's shadow. His suit glowed in the sudden sunlight as he struggled, grasping at vacuum.

Lighthill was immersed in silence, save only for his own breathing

Briggs put down the phone.

Maclaurin stood at the window of his office, overlooking the Blue Streak manufacturing area. Briggs came to stand behind him.

Teams of Ministry inspectors were moving onto the shop floor, Briggs saw, lugging heavy oxy-acetylene cutting gear.

Maclaurin said, "You know how I started in this business? I worked for the RAE, down in Farnborough. This was just after the war. And my job was to scour the countryside, and bomb craters in London, for bits of V-2s. All that beautifully tooled guidance gear Jerry was so bloody smart at, stuff we couldn't match. You have to hand it to the Germans. It was like studying artefacts from the future. Yes, that's it; for us, it was the bloody future." He took another slug of his whisky. "But now it's the past, for you and me, eh, Guy? Makes you wonder who won the bloody war," he growled.

"The Americans," Briggs said bleakly. "The Americans won the war. And we were the prize."

An oxy-acetylene torch flared brightly on the floor below. Its operator lifted it, and raised it to the helpless flank of a Blue Streak airframe.

Josh Morris had never known the Operations Room so quiet.

The TV feed was showing the continuing Aborigine demonstration outside the security perimeter. The Abos were standing silently under a PA speaker;



even they, it seemed, were transfixed by the news from orbit. Gough Whitlam, the Prime Minister, was at the fence, making some kind of comment. The white settlers in Australia used to give the Aborigines infected blankets, Morris had heard, a policy of extermination disguised as aid. The Aborigines had suffered more than anyone else following the British nuclear tests at Maralinga. And now here where the Brits, Morris thought, firing off grandiose space rockets from the middle of the old peoples' ancestral grounds. Fizzers across the gibbers, the Aussies called it.

In another thousand years, he supposed, nothing would remain of Woomera: the launch complexes, the railtrack, the barracks-like housing. It would be as if it never existed. But the Aborigines would endure, as they had already for millennia.

I shouldn't have listened to Briggs, he thought. I knew this damn manoeuvre was too risky. I told him.

I should have had the guts not to refer this upwards.

One by one, the controllers' voices, subdued, came back on the loops.

Just another couple of hours, Morris thought. That's all. Then I can walk away from this, return to England, pull the decaying green of Hampshire over my head like a blanket, and hide away for the rest of my life.

The cabin, without Roly Gough, seemed huge; Lighthill cowered in his seat.

There was a hiss, a rattly thrust which pushed him into his couch. The big [Waxwing](#) retrorocket cluster on the base of the Propulsion Module was working.

"Retrofire," he whispered.

"We see it, Geoff." The capcom's voice was strong. "We'll do the rest. You'll soon be home."

Beyond his window, Earth slid away from him.

Now the thrust sighed to silence, and he had a couple of minutes more of zero gravity. There was a muffled rattle, all around the base of the cabin. That would be the ring of pyrotechnic bolts at the base of the conical Entry Module, firing under command from Woomera, casting off the Observation and Propulsion Modules. All that gleaming equipment he'd not been able, in the end, to reach.

There was something rising above the Earth's atmosphere: golden-brown, serene. It was the Moon, slap in the middle of his window.



Now there was a haze beyond his window, a soft, pink glow, like a sunrise. The glow was ionized gas, atoms from the top layer of Earth's atmosphere, broken apart by their impact with Prospero's heatshield. The attitude thrusters continued to fire, their glow reflecting from the thin atmosphere around him.

He thought of Roly Gough, drifting away, his RAF wings bright on his oversuit, brilliant white in the sunlight. The essence of Britain: magnificent, defiant, absurd.

Suddenly the pressure mounted, climbing fast, crushing him into the couch. [A cold grey light glared into the cabin](#), drowning out the instruments' glow.

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