

CHAPTER ONE

I HAVE A painting in the hallway of my house in Berwick-upon-Tweed, by the Scottish artist Duncan Mackellar. It is a large work set in St Enoch Station in Glasgow on a dusty summer evening in the 1880s. A woman in late middle age, dressed in dark and modest clothes and carrying a parasol, is standing tense and distraught, looking out beyond us, oblivious of any other presence. Behind her the high smoke-grimed glass and wrought-iron walls of the station rise up. She is gazing off the edge of the platform at a vanishing train, so that we see her through the eyes of a receding traveller, and she has the flat restrained face of a person who has learned to swallow grief. Her sudden loneliness is captured as she strains to keep an image of her child, or so we assume, who is on the train heading for the emigrant ship or a colonial war – India, Afghanistan, the Gold Coast.

Although it is a conventional image, it is genuinely moving. I have always loved it. Railway stations have always attracted me, not just because trains are there, but because they are also ambivalent places, echoing

with completed journeys and shrill with the melancholy noises of departure. Mackellar's painting is about the inevitability of separation, the cost of journeying. And we have never created any sound so evocative of separation as the whistle of a steam locomotive, that high note of inhuman relief as vaporized water is blown off and meets the cold air.

Once in the 1970s I went to St Enoch and stood on the platform at the spot that Mackellar's painting creates for the viewer, and the back of the great shed, like an enormous Victorian conservatory, seemed hardly to have changed. The station was not yet quite disused and silent, though a few years later it was destroyed, like so many of the other steam cathedrals. That age is gone now, finally, but the reality of grief, and the consequences of grief, of which Mackellar caught something in his painting, are not so easily banished.

The passion for trains and railways is, I have been told, incurable. I have also learned that there is no cure for torture. These two afflictions have been intimately linked in the course of my life, and yet through some chance combination of luck and grace I have survived them both. But it took me nearly fifty years to surmount the consequences of torture.

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I was born in 1919, the year the World War formally ended, the year that Alcock and Brown drifted down out of the rain over the Atlantic and landed their frail bomber in an Irish bog. I remember being told about

this feat of aeronautical engineering and skill at a very young age, and thinking about the two intrepid pilots as I was walked along the grey promenade of the seafront at Joppa, to the east of Edinburgh. ‘Joppa’ is the name of the biblical town where Jonah went when he was fleeing God, and from which he took ship. I discovered soon enough, though it was a long time before space on that scale meant much to me, that this sea was a sheltered inlet, the Firth of Forth, and that even though the distant Fife shore could only be seen in fine weather there were worse seas out there behind the fog and wind.

John Lomax, my father, was a quiet, disciplined, serious man who knew what was best for his wife and child and was unused to taking no for an answer in his own house. Until the age of fourteen he worked for a pawnbroker in Stockport, on the fringe of industrial Manchester, and then in 1893 somehow got into the Post Office, an institution he stayed in until his retirement almost half a century later. He started as a ‘telegraph messenger’, the most junior post then available and even lower than the entry grade which he would choose for me when I was sixteen. By the time I was born he was a middle-grade civil servant, a manager of staff in the Edinburgh General Post Office, a stable and trusted official.

My father moved to Edinburgh, a city of politics, law and services, in 1909, but all his life remained a child of the industrial revolution, full of vivid memories of coal, smoke, smog and steam power, of great mill engines and railway locomotives and the Manchester

Ship Canal. It is hard to explain to young people born in countries that have almost forgotten heavy manufacturing just how awe-inspiring the very processes that shaped our lives could be; for my father, and for me later, great machines were not fearful or distressing but things to be celebrated, as fascinating as the natural world, creatures made by men.

By the time I was able to notice such things, he was part of a reading circle of fifteen or so, men and women, who would visit each other's houses and read papers on such topics as the novels of Arnold Bennett, which my father devoured as the nearest thing he could find to a literature of his boyhood world, or the Edinburgh of Sir Walter Scott. My father was also the regional editor of the *Journal of the Institution of Post Office Electrical Engineers*, to which he contributed local news. And, like all dedicated believers in improvement and discovery, he read H.G. Wells. He had a little library of such books. On his shelves I remember Oliver & Boyd's *Edinburgh Almanac* from the 1830s, some books on popular science and Samuel Smiles's *Lives of the Engineers*.

I also remember my father's copy of Hendrik Willem Van Loon's *The Story of Mankind*, which came out in 1931. It was an inspiring narrative of achievement and progress, and as a child I absorbed its tale of optimism and invention, each new breakthrough seeming to promise more speed and ease and excitement. One of the most intense events of my childhood was finding the secret chart of 'The Great Discoveries' hidden inside the decorative dust-jacket of Van Loon's book.

I was convinced that there were thousands of readers who had never looked at the back of the jacket, and that this wonderful branching tree of human ingenuity was for me alone.

My first memory of a world beyond my infant needs was not of an animal or a park, but of a strange mechanical assembly. One of my father's frequent destinations on those walks beside the sea was the Joppa Tram Terminus, which was situated where the historic main road from Edinburgh to London touched the Firth of Forth. On one of these walks, when I was a very small child, we rounded the corner of Di Rollo's ice-cream parlour and found Joppa Road blocked by a huge barricade of tram cars, a wall of maroon and white metal. Each tram was an elegant two-storeyed coach-house, with delicate-looking wooden frames surrounding the windows, and each was two-headed, its end windows arranged in a five-sided prism. The trams had open platforms at each end from which right-angled stairs disappeared tantalizingly into the open upper decks. They were waiting to take the crowds coming from a race meeting in nearby Musselburgh back into Edinburgh. I stared at this herd of machines. I didn't know there were so many trams in the world.

Joppa was, unfortunately for my awakening fascination for vehicles that ran on rails, a tram heaven. It was a terminus on one of the last cable tram systems in the world, its cars attached to their bases by ropes of steel wire up to five miles long running in a conduit between the rails, the cables paid out by big stationary steam engines in the depots. Soon after the revelation of the

massed tram cars, my father took me to see an oily trench below the surface of the roadway at the Joppa terminus. This chamber was the cable pit, and in it was a large flanged wheel round which a steel hawser revolved, pulling in the car from Portobello, the nearest suburb to the west. Every few minutes a tram would arrive, detach itself from the eastbound cable and, after gripping the westbound cable, head back to Edinburgh at a stately twelve miles an hour.

There was something infinitely reassuring in the predictability of this system: the heavy double-decked trams drawn through the streets, moving widely but never randomly around the town, cruising steadily through the mill of bicycles, horse-drawn delivery wagons and pedestrians. It was as though the trams laid down an orderly grid on the chaotic life of the city.

The antiquated cable vehicles gave way, soon after I became aware of them, to electric trams. When I was about four, I was with my mother on the promenade when she pointed out what she told me was the first electric tram heading for Edinburgh. The big steam engine in the local depot shuddered to a halt late at night about a month later. My father told me about it the following day; I could tell that to him this was a solemn moment, the end of something, and that it made him sad.

As children we loved playing on and riding the trams, learning the personalities of the conductors, some of them not exactly friendly to boys, and discovering that the drivers now had personalities too, for the fixed jogging pace of the old cable trams was a thing of the

past and some of the drivers put the handle down and ran their sparking wagons like demons. A tram one day jumped the rails on the curve of King's Road in Portobello, broke through the wall of Portobello power station yard and ended up hanging over the railway line that fed the power station with coal. It was a sight, that big green tram car poised so weirdly out of place: a hint that orderly communication between one place and another could be violently interrupted, that the world could be a dangerous place. Still, electric trams were progress, and every advance was greeted in those severe and frugal years with more acclaim than regret. We were entranced by progress, in a way no-one now is. Little did I know where it was taking me.

My mother was not so taken with mechanical wonders, which is not surprising in someone who grew up one hundred and fifty miles from the northern Scottish coast, in the Shetland Islands. She was a very gentle woman, with a dignified manner and a visionary quality that I've always associated with her growing up in a community which still spoke a dialect of Norse. She was the fifth of eight children. No greater contrast with my father's background can be imagined. Generations of her family had gone to sea in small fishing boats. Her father had built up a substantial fish business, had come south and was a prosperous man in Leith, Edinburgh's port, by the time he died in the year before my birth.

My mother's dreams and traditions were also very different from my father's. She talked about lonely crofts, herring fishing, peat fires and the never-ending sound

of the sea; she described a summer daylight that lasted twenty-four hours, hay-making, banks of sea-pinks on the white mica-sand beaches; and the ferocious winds that rip everything but the most twisted and flexible forms of life out of the ground in the winter months. Her family, the Sutherlands, had their own chronicle of disaster: her ancestor John Sutherland was one of 105 fishermen drowned in 1832 when eighteen open boats were overwhelmed in a July storm; and two more Sutherland men were lost in another Shetland summer storm in 1881. The family lived close to death in a way that city people could not understand. My mother nurtured the romanticism of a person displaced from a hard rural community, though she knew there was no going back. For all that, she was probably homesick throughout her life in Edinburgh.

She gave her child a sense of mystery. Even the place-names of Shetland seemed intangibly beautiful: where else were there islands with names like Vaila, Trondra, Balta and Unst? My mother had modest literary ambitions, and wrote what she called 'essays' and poems; she read a lot of books. The dour realism of Arnold Bennett could not do justice to the extremes of an island imagination, and my mother's favourite reading was probably the work of Jessie Margaret Edmonston Saxby, Shetland's most famous writer, who she knew, and who was already in her late seventies when I was born. She would still be alive in the first year of the Second World War.

My mother cared for me deeply, and was probably over-protective of me, and a little possessive. I had a demanding streak, loved making lists, writing things

down, collecting cuttings from newspapers, and my mother tolerated and encouraged all this and kept up a supply of stationery for me. She called me 'The Peerie Professor': 'peerie' was Shetland dialect for 'little'. I loved her, but perhaps the kind of world into which I was born did not encourage identification with her nostalgia for the past; something harder bit into me and led me into my father's world, and after all this was what was expected of boys in the 1920s.

One lasting effect of my mother's influence was the situation of the house I was born in, on a terrace in Joppa that offered a magnificent view of the Firth of Forth. I think she wanted to be near a stretch of water that had no visible landfall, most of the time, and from our terrace you could look out the window over the sea, which was usually grey and cold. Its short restless waves sent a bracing chill into our bones, reminding us that we were lucky to be on firm ground, never quite allowing us to relax into the illusion that we were in command of the earth.

Childhood was a time of stern affection. I was sheltered by serious and old-fashioned people who cared for their 'only child', the term implying a slight misfortune, as though single children were deprived, the lucky product of some fault in the hereditary material. I may have been a surprise to my parents. And I've often thought that it was just as well there was only one of me.

My father had a carefully organized routine and I still have an image of him leaving the house each morning to catch the No. 20 electric tram to the GPO in Waterloo

Place in Edinburgh. He was meticulous about timetables and journey times, a trait I have inherited, a need to know that I can arrive and depart predictably.

He took us on holidays, to places like Aberdour in Fife and Glenfarg in Perthshire, crossing the high and wide span of the Forth Bridge in a carriage drawn by one of the beautiful Atlantic locomotives of the former North British Railway. To be trundled across that bridge was to be moved through a rattling world of steel and cold air, the high cantilever towers soaring above us and the water far below, visible through the metal struts. The bridge was a greater wonder than the Pyramids, the most wonderful bridge in the world: as every Scottish boy knew, it was about a mile long, contained eight million rivets and employed twenty-nine men full time just to paint it.

When I was still very young, my father took us to Shetland. This was a real expedition, a five-hour train journey to Aberdeen for a night crossing by steamer to Lerwick. The steamer was called the *St Sunniva*, the pride of the sonorously named North of Scotland and Orkney and Shetland Steam Navigation Company Limited. It was an elegant vessel, a converted cruising yacht, well able for the North Sea.

I think my mother must have known the chief engineer, because when we were out to sea I was taken to the engine room, from which I was extracted only with considerable difficulty. It was another of my childhood epiphanies: a rapture of hot oil, of enclosure in vibrating energetic metal, the loud rhythmic thunder of the pistons in their cylinders, the warm vibrating

air, the smell of burning coal, the ingenious swimming movement of the rods as they moved back and forth. If this was a machine, I wanted to be near one again soon.

We stayed in the Shetland Islands for a month. I remember falling into the sea, and running around half-naked all afternoon while my trousers were spread to dry on a rock in the sun; and playing on a beach at Lerwick and skipping flat stones over the water. One stone was a piece of bottle-glass, which ripped open the end of my finger. But it was all perfect, the stiff transparent sheen of salt on hot skin and the seaweed smell of the sea. The high ceremonial point of the holiday was the visit to Great-Uncle Archibald, who was no less than the Clerk to the County of Shetland. He lived at Lystina House, considered the best address in the whole of Shetland. My mother was immensely proud to be the niece of the top local government officer in the islands, while my father, and I myself, were rather more impressed by Great-Uncle Archie's stamp collection, which was quite magnificent.

My curiosity nearly killed me even then. I was taken out with my father by a couple of fishermen in a rowing boat on the Loch of Spiggie, in the south of the island. Insatiably inquisitive, I pulled out the bung in the boat's hull and held it up. 'What's this?' I asked. I was aware of a spasm of anger and a sudden controlled urgency about the adults' behaviour. I had done something dangerous. The oarsman pulled for shore, his boat slowly sinking under us.

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Shortly after that first visit to the Shetlands in 1924, I was made to attend the Royal High School in Edinburgh. So far as I could make out, the choice of this school was based not on its 800-year history but solely on the convenience of the new electric tram service and its door-to-door linkage of our house with the school.

For all my later interest in technology, the school did nothing to encourage it: not even physics was taught properly. Our subjects were Maths, English, Latin, Greek and French. It was a deeply traditional academy, and it was difficult to shake it out of its obsession with the classics.

I did not feel that I was a particularly isolated child, but perhaps the habits of the only child made me more aloof, gave me some element of self-sufficiency that others did not need or simply lacked. I avoided organized sports and games, for example, with stubborn determination, a non-conformity regarded as eccentric at a time when team spirit was the key to manliness. I went to a football match, once; I think I played rugby about as frequently; and I occasionally played cricket. On the other hand, I discovered that I could swim exceptionally well, particularly in the sheer hard slogging of long-distance events. I never really discovered what my limit was, but I could swim several miles without pause. This was a solitary and dogged skill, and I loved the drugged rhythm of drawing myself through the water, that strange anaesthetic called stamina sustaining the ache of tired muscles. I was immensely proud, despite being a loner, of the Portobello Amateur Swimming Club badge, even if the regulation colours of brown and yellow made one

look like a wasp. This did not save me from persistent pressure, from masters and even other boys, to conform and to put my obvious fitness to use in the rucks and scrums of the rugby field. I would offer to discuss the question over a mile or two in the water, which had a way of silencing my critics.

Because it became with hindsight a premonition of other events, I remember one consequence of slackening my resistance to team activity. I joined the Owl Patrol in the 12th Edinburgh Royal High School Scouts, and wore my brown uniform along with all the other boys. We met weekly in the school gymnasium. One evening in the early 1930s, we were being taught by our scoutmaster to use long staves for crowd control – a most unscout-like activity, some echo of the General Strike of 1926, or maybe just another of those hints that the world we were about to enter was a place so full of conflict that even games had to be made a preparation for it.

Towards the close of the evening the scoutmaster decided to give us a demonstration. We were lined up as a kind of human barrier, our poles at the ready, while certain other Scouts were struck off to impersonate a mob. They were unleashed at us through a suddenly opened door, charging at us wildly in a licensed free-for-all, young bodies crashing into others with good-natured brutality. We could not control them and our troop leader had lost control of all of us. The crush of the attackers caught me with my hand flung out. I can still feel my right arm being bent further and further backwards until it snapped. There was a moment of

sheer panic and disbelief, then the shocking pain of the break.

The scoutmaster, resourceful to the last, turned his failed experiment at crowd control into a first-aid demonstration. It was not every day that he could show his troop a real broken arm. He snapped a yard-stick in two to make a pair of splints, found some bandages and called for a taxi. When I reached the emergency department of Edinburgh Royal Infirmary I had to wait only briefly before being wheeled into the operating room where I was given a very inadequate anaesthetic: the chloroform barely dulled the crushed nerves. I felt my arm being stretched and manipulated to get the sheared bones back into position. It is strange how easy it is to remember pain.

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I did not like the school, and even though I achieved first place in some subjects in my early adolescence – once scoring 100 per cent in a Latin examination – I found the syllabus intolerably dull. Gradually, I lost interest in academic results. I became enthralled by subjects that the Royal High School found it difficult to endorse.

Like many schoolboys, I collected things as a way of making sense of the world's confusion. In August 1926, my father took my mother and me to Inverness for a few days' holiday while he was doing some work in the Post Office there. We stayed in the Glen Mhor Hotel on the south bank of the River Ness. He bought a large

packet of mixed foreign stamps in the Inverness market to keep me amused. This was a good pacifier of a curious and restless child, but it started the first of my collecting passions, that of philately, which has not left me yet. Later this mania expanded into coin collecting, cigarette card collecting, then the collecting of picture postcards. Fortunately other boys were similarly inclined; fortunately too the raw material was cheap, so building up collections was not a problem. This hunger for all the little circulating tokens of an industrial economy could take in anything, and with us it extended to railway tickets, matchbox covers, autographs and marbles. Compared to the temptations open to children today, ours were not dangerous compulsions, and those parents who tried to wean us off this acquisitive mania would be shocked to see these schoolboy collections now selling for small fortunes.

But these were minor pastimes, mere flirtations, compared to the discovery I made one warm evening in the autumn of 1932 when I was out walking with my mother in the Portobello district. I even remember the precise date: 12th September. We were crossing Park Bridge, a long foot-bridge that spanned a wide cut in the ground between a golf course and a residential neighbourhood. I stopped on the bridge, on an impulse of no importance, and looked down – into a new world. Below me was a shiny heavy web of iron and wood, dead straight parallel lines of metal suddenly curving and merging smoothly into other sets of tracks; ladders fixed to the earth, climbing into the distance. They were spread out and branched off beyond the bridge; close up I could see

the worn silver of the rail surface and the dark steel of the chairs and the wood of the cross-sleepers. In the dusk the tracks looked like lines of mercury on the oil-stained timber and gravel.

I was looking into Portobello Goods Yard, one of the largest and busiest rail freight yards in the country. It wasn't empty even on that quiet late summer evening. There were two steam engines working near the bridge, shunting engines pushing trains and empty independent wagons further back into the yard. I read the engine numbers: 9387 and 9388. They were solid machines, their lines unflattering, with large tanks flanking and obscuring the curve of the boiler, but they were gorgeous. Each had a tall chimney, shaped like the stove-pipe hat worn by Isambard Kingdom Brunel as he posed against the giant paddle wheel of his *Great Eastern* for that famous photograph. I was not surprised he looked so confident, if he could create machines like these. Their six driving wheels turned slowly but irresistibly against the tons of rolling-stock in front of them; I heard the crash of straining metal as the couplings took the weight and tension; I smelled again the combination of hot oil and coal smoke that I remembered from my visit to the engine room of the Shetland steamer. A grey column of smoke billowed gently out of the chimney of the squat shunting engine, with little feathers of steam drifting back over the length of the tubular boiler and around the polished brass safety valves in their dome like a fixed bell set in front of the cab. I didn't know it at the time, but I was watching a well-run engine in the hands of a good driver.

On the bridge, I felt suspended amidst the working engines, the branching rails and signal gantries, the station platforms and the brick warehouses. Anyone who has not seen a great railway junction on a sunny evening in the steam age cannot imagine the fascination of it. For a boy – for me – it was an animated, mysterious, mechanical paradise.

Further back in the yard several larger, more powerful-looking engines were drawn up; their giant spoked wheels connected by coupling rods that looked as big as the foot-bridge's girders. There was an awesome potential in those linked wheels, rods and pistons – power at rest. A little way beyond Portobello, one of the engines was drawn up beside a blackened wooden shed, and from a high door in its side a wooden chute hung out over the tender behind the engine. A man wearing a waistcoat and cloth cap was filling the chute from a big bucket of coal, and the lumps clattered down on to the black heaps which another man, dressed in a rough blackened grey jacket, was shovelling and levelling into place.

That was the start of my incurable interest in railways. From that day onwards I spent a lot of time on Park Bridge, and soon became aware of other boys with similar interests leaning out over the engines as they slowed down on their way into the goods yard, or cruised at speed further out on their way up the East Coast main line between Edinburgh and London. For Edinburgh was a rail centre, and I lived at the eastern end of a great loop of lines punctuated by stations, depots, tunnels, repair yards and goods terminals. I

could watch the flagship engines of the London and North Eastern Railway rush by, a long procession of carriages drawn after them as they headed for Edinburgh Waverley – the company’s very own station and a mecca for train lovers – or catch the smaller, older engines at the head of suburban and country trains. They were all trains, and that was enough for now.

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It was like love, my fascination for those huge, noisy machines that were already near the end of their golden age. They moved with such magnificent purpose. They were alive, they had steam, smoke and the smell of minerals; they burnt energy without concealment, and you could see their fire. They raced against themselves, losing more heat than they used, running by burning their own cargo of coal; but there was something very human about the need to keep fire going by hand, shovelling and watching, never for a second being able to forget responsibility for the journey and the work. Their waste didn’t have to be buried in lead-lined coffins, it was exhaled as carbon, sulphur and nitrogen, or swept and scattered as ash, the unburnt particles of coal settling gently on our clothes and hair.

Some things that humans make transcend their function; instruments can be magical. That explosive, rhythmic sound we call puffing says more to us about getting under way, about departure, than a petrol-driven snarl can ever do; perhaps it has something close to the beat of our pulse. Even if we were using up and heating

the earth too much, and no-one knew that at the time, it would have been worth making an exception for steam engines. They were beautiful machines; the most beautiful machines produced in the industrial revolution.

The Reverend Awdry, author of the railway series of children's books that attracted millions of infant readers long after their parents had forgotten the age of steam, once said that railways 'touch' people, make us seem eccentric; and yet we discover that they have the same effect on almost everybody else. I have certainly felt a little eccentric at times; but I suspect that we are all railway lovers, at some deep level.

The honest power of a steam engine is overwhelming – most of its important parts are on display. You see the great cylinder with cranks and mechanisms outside it, you see the ingenious connection of levers and rods to the enormous wheels and you have already understood that this combination of things will work, and you might even see how. Unlike a motor car or a nuclear ship, there's no secrecy about a steam engine's force. What engineers call the 'motion', the linked shafts and pistons and wheels that drive the engine, is as fascinating as the movement of a watch. And almost as jewel-like, for the couplings and connecting rods were often still chipped and filed smooth by hammer and chisel, after they came off the milling machine. Hands still made parts of these engines, and it is no surprise that drivers spoke of them as individuals. But essentially, the engine was a boiler held in heavy frames on a set of steel wheels.

The simplicity of it fascinated me. Coal, burnt in a

furnace surrounded by water, created steam; steam confined in a cylinder pushed a piston, and linked to wheels by rods that turned the straight thrust of the piston into rotatory motion; the engine moved and worked. The idea that hordes of people and commodities could be carried at such shakingly powerful speeds by a sort of articulated kettle, in which the water could never be allowed to fall below the top of the furnace or there would be an explosion, seemed amazing to me. What made it all so different from today's electric railways, which run at set speeds, was the need to be aware at every moment of the perilous balance of fire and water, which also gave the possibility of going a little faster if the engineman was good, or of disaster if he was incompetent.

Like everything else we make – firearms, for example – the simple idea could be endlessly refined, developed and decorated. I discovered trains in their heyday, when steam under pressure had achieved astonishing things. Libraries of books were written on the improvement of Watt's basic idea. More sophisticated valve gears gave more subtle control of pressure; steam could be superheated to get more pressure out of it; more yards could be added to the labyrinth of copper fire-tubes inside the boiler to give a bigger heating area, and therefore more heat and steam. But it was the way it all worked together that mattered; in the poetry of great engines, their appearance, speed and mystique.

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