A Fruitful Partnership

Muschi's death, Robens's arrival at the National Coal Board and Fritz's marriage to Vreni all combined to show Fritz that there were no longer any decisions to be made about his future. With the prospects of a new family on his hands he could not start taking risks and leave his job, nor did he want to, as Robens gave him justified hope that he was going to be taken seriously at last. With his domestic life settled, he could give himself up to his work again. As before, it took precedence over everything else. Not even a new young wife, suffering the first discomforts of pregnancy as well as the hostility of a teenage stepdaughter, kept him at home when work dictated otherwise. Before Vreni had time to accustom herself to her status as a mother, Fritz, utterly confident in her ability to cope, departed in November 1962 for a six-week visit to India. He counted on her support just as he had confidence that Robens, who was using him to the full, would nevertheless allow him leave of absence. Neither let him down.

Under Robens Fritz at last filled the role he had hoped to fill since his first job as Economic Adviser in 1946. This time he had the ear of someone who wanted and respected his advice. Fritz did not mind one bit that some of his colleagues resented his sudden move from the periphery to the centre of N.C.B. decision-making. His only concern was that everything he had worked on should at last see the light of day. That some Board members, particularly those who had been close to Bowman, felt Robens was creating a court atmosphere and that Fritz was known as the 'court jester' (a name originating from Bronowski) did not deter him. Robens was going to use him and that alone made it worth staying at the N.C.B.

The problems Robens inherited needed decisive and strong leadership. He became Chairman of the Board when Europe was preparing to shut down its coal industry for ever. But Robens was not the sort of man to preside over a declining industry. He understood at once that it was important to keep the coal industry going and used Fritz to feed him with all the arguments he needed in the battle to keep the industry not only alive but also thriving. Robens did the fighting, Fritz supplied the ammunition. Battles were fought on many fronts but throughout the decade under Robens the battle-cry was the same, '200 million tons output per annum.' The most important task was to try and convince the Government and public opinion that the coal industry was worth saving. The feeling throughout the industry was that this would be very hard under the Conservatives and that the only real hope was to get Labour back into office. Labour was traditionally the friend of the miner, Robens was a former leading Labour politician and Wilson and George Brown had pledged themselves to the 200 million tons target at the 1960 N.U.M. Study Conference, professing to have understood all the arguments put forward to maintain a strong coal industry.

When Labour won the general election in 1964 Fritz was therefore jubilant, particularly when, soon after taking office, George Brown issued a White Paper in which he upheld his pledges at the Study Conference of 1960, saying that the Government believed in a strong coal industry. But it soon became apparent that this assurance was not worth the paper it was written on. The Labour Government believed in cheap oil and in high technology nuclear energy. Bitterness between Wilson and Robens was increased by the frequent changes of the Minister of Power so that it was impossible for a proper working relationship with the Government to be established, let alone to achieve an understanding of the real issues. Wilson's Government, blinded by the benefits of short-term, cheap energy, turned their back on the people; blinded by the seductions of high technology they put their money into nuclear-powered stations and forced the pace of pit closures to acceler-
ate. Life under Labour was far worse for the industry than under the Tories. Fritz felt disgusted and betrayed. He never trusted Wilson again and although he maintained his support for the Labour movement, declaring that his hand would wither if he ever voted Conservative, he no longer believed that the socialists in power were following the true path of socialism. The only advantage they had over the Tories was a greater concern for the fate and future of the redundant miners. Here the principles of socialism were allowed to play their part and money was available to ease the suffering of the unemployed and their families. Fritz, grieved by the social effects of the closures, travelled endlessly around the country trying to keep up the morale of the men and tried to liaise with the M.P.s of the worst-hit areas in preparation for the closures. But not even questions in the House from M.P.s such as Judith Hart, in whose Lanarkshire constituency all the pits were closed within a space of three years, could persuade the Government to think again.

The arguments with which Fritz furnished Robens, and which he himself put forward endlessly in lectures and articles, were basically the same as those he had put forward in the 1950s, only stronger. He pointed out the finite nature of the non-renewable energy resources and the foolishness of abandoning one major source just because another happened to be cheaper in the short term. With the formation of OPEC in 1960 Fritz had hoped that politicians would recognize that the Middle East would not supply the West with cheap oil for ever. Yet to his astonishment OPEC was not taken seriously at all by politicians or economists. ‘They are beginning to recognize their strength,’ Fritz insisted. ‘When they see that their oil isn’t going to last for ever, you can be sure that they will take action. They have no alternative. They won’t want to go back to sand and camels.’ Ridicule was the only response to this suggestion. Nor did politicians accept the political argument that it was dangerous to depend on the unstable Middle East. Not even the 1967 war seemed to bring this home. Fritz could not get across the fact that coal’s inability to compete with oil was a short-term phenomenon, that as the oil sheiks saw that their oil supplies were limited, prices would rise and coal would once again become a viable alternative source of energy. And very few people understood the even longer-term factor – that as non-renewable sources of energy became increasingly depleted it would be vital to have every option at one’s disposal. This long-term view was particularly important in the case of the coal industry. Of course, it would be extremely costly to keep the coal industry going until coal was competitive again but, in Fritz’s view, this was precisely the sort of situation for which nationalization had been created. It was in the best interests of the nation to have a coal industry, even though it was not economic in the short term.

While everyone on the Board understood the effect that closure would have on the industry’s ability to produce coal in the future, not all of them understood the reasons why this should cause the gravest concern to the nation. Some were not convinced by Fritz’s predictions that oil prices would rise and that by the 1980s energy shortages would begin to be felt. Others believed in the power of science to find a solution. They held the view that world energy needs of the future would be met by nuclear energy. Only the social arguments for keeping the industry going united the Board.

To Fritz the failure of some Board members to understand the issues was cause for despair. The arguments were so obvious to him, the writing on the wall for industrial Europe so clear if the importance of coal was not understood, that he could only assume his colleagues lacked some essential mental equipment. Their faith in nuclear energy horrified him more than anything. He had been collecting statistics about nuclear energy since his first meeting on the subject three days after joining the coal industry and had watched its progress closely. There was no question in his mind that the impact it would have on the supply of energy in the 1960s, 1970s and 1980s would be negligible. Not only was it the wrong kind of energy, contributing only to base load electricity needs, but in percentage terms of total energy needs, its contribution was insignificant and would continue to remain so beyond the energy gap. To replace coal by nuclear energy just did not make economic sense. All the figures spoke against it.

I go and look at these vast buildings … I reflect that they are as big as the Cathedral of Cologne which has taken many
centuries to build. Well, this was built in as many years. A little human being looking at it is overpowered by the impression, but through the jaundiced eyes of an economist one wants to go a bit beyond this visual impression and work out how much it's worth in terms of fuel. Well, a station ... is likely to have a twenty-five year life, it's reckoned to have an annual output of about 1,000,000 tons of coal equivalent, so it's worth about 25 million tons of coal over its entire life. Well, of course, on these statistics we can forget it. If we shut a pit with 25 million tons of reserves it doesn't even get into the papers. Certainly not into the national papers.¹

In fighting to keep a role for coal it was Coal Board policy to attack the nuclear option furiously with the economic arguments. But Fritz had deeper reservations about nuclear energy than the economic and practical objections he put forward. He had voiced these as early as 1955 in 'Economics in a Buddhist Country'.

It is already certain beyond any possibility of doubt that the 'Oil-Coal-Metal-Economies' cannot be anything else but a short abnormality in the history of mankind - because they are based on non-renewable resources and because being purely materialist, they recognize no limits. The frantic development of atomic energy shows that they know their fate and are now trying, through the application of ever increasing violence against nature, to escape it. Atomic energy for 'peaceful purposes' on a scale calculated to replace coal and oil, is a prospect even more appalling than the Atomic or Hydrogen bomb. For here unregenerate man is entering a territory which, to all those who have eyes to see, bears the warning sign 'Keep Out'.

A decade later none of these arguments had penetrated and as he watched the coal industry run down and the government contracts being given to the inexperienced atomic energy industry, he decided that the time had come to put the full story to the public. The opportunity came when he received an invitation to speak to the Clean Air Society, a society dedicated to fighting pollution. It was not pollution from coal that threatened the world, he told his audience. There was now an ultimate pollutant that threatened the whole world: from the nuclear energy industry. Backing his argument with more statistics and authoritative references than usual to give his argument credibility, he drew a grim picture of the dangers inherent in the production of nuclear energy, proclaiming that it was the ultimate expression of the violence of the materialistic rule of the religion of economics.

The furore that erupted the day after he had delivered his lecture took him completely by surprise. He was violently attacked in the House of Commons and his lecture condemned as irresponsible, chiefly by the Liberal M.P. for Orpington, Eric Lubbock, and the Minister of Power, Richard Marsh. I was at Holcombe that evening. As he came into the kitchen where we awaited him for supper, he wore the same expression of suppressed pain and suffering on his face as he had done some years earlier when he broke his ribs in the car accident with Vreni. He was bewildered and hurt. It seemed to him extraordinary that he should be so ferociously condemned for saying that the production of nuclear energy carried some terrifying potential dangers to mankind, especially as he knew - as he pointed out in a letter published in The Times a week later on October 25th, 1967 - that he was ‘not alone in taking the view that - in the absence of necessity - even a small amount of genetic damage cannot be justified or excused by economic considerations.’

More expressions of support followed from many unexpected quarters. The most revealing was from a member of Harold Wilson's staff at 10 Downing Street who, having had access to many papers in possession of the Prime Minister that were utterly in agreement with the views Fritz had been expressing, was disgusted at the sheer hypocrisy of the Government's reaction to Fritz's lecture. The incident left Fritz with a hidden hostility towards his major critics and he was not sorry when Eric Lubbock lost his seat at Orpington in the next general election.

Without governmental support during the 1960s or public recognition of the importance of a strong coal industry, and with oil prices at levels tantamount to dumping, it became
more important than ever to make the industry as efficient as possible and go all out for a massive sales drive. It was the opportunity for which Fritz had waited for over ten years and one by one his schemes and suggestions were put before Robens. In 1963 the suggestion he had made twelve years earlier, that there should be a completely new statistical approach, was taken up, and Fritz was appointed Director of Statistics in addition to his role as Economic Adviser.

Fritz was delighted with his appointment as Director of Statistics. He said to his new staff, 'I must have done something very good in my last life to have deserved this.' The work seemed to him to be pure joy. He lost no time in making changes so that statistics were no longer collected for their own sake but could give a clear picture of the state of the industry at a glance and could lead to action. He instituted a system of 'green papers' on which the key figures of the industry were circulated to all Board members and managers. He took great care not only with giving the maximum information with the minimum of figures, but also with the presentation of the statistics. He sent his statisticians out to comb the stationery shops of Victoria and further afield to find exactly the right green folders and paper he had in mind. Such was their admiration for their new Director that no one resented being used as errand boy. The whole department was behind him and worked willingly and hard. Fritz's method of handling them was still based on personal qualities rather than power. One member of the department, Brian Simpson, commented, 'He had one terrible, ghastly weakness ... he had rosy coloured spectacles. He could not believe people could be so stupid, particularly senior people.' But this was in fact his method of getting the best out of people. By giving the department the impression that he thought they were all great and far more capable than they thought they really were, Fritz gave them the feeling that they had something to live up to. Brian Simpson, however, learned from experience that Fritz did see the reality of people's faults. After Fritz took over the Statistics Department Simpson left for a year because of a personal conflict with another staff member. When the staff member in question left, Simpson reapplied to join the Statistics Department. At the interview Fritz smiled at him in his most charming way and said, 'I am glad to see that you have recovered from your illness.'

Fritz's main preoccupation in the Statistics Department was with devising methods of obtaining and presenting figures to show which areas in the Coal Board's activities needed attention. He distinguished between 'information for information', which showed what had happened but had no further interest, and 'information for action', which gave a picture of the movement in the industry and highlighted the areas where attention needed to be given. It needed skill and discernment to single out those figures which could 'sing' and to avoid obscuring their message with other figures. In the year of his appointment Fritz dramatically demonstrated his ability to make this discernment.

That year Fritz and several Board members accompanied Robens on a trip to Japan. Fritz enjoyed the trip hugely. He was very impressed with the cleanliness and industry of the Japanese and was charmed by the Geisha girls and tea ceremonies. When it came to going down a Japanese pit, however, he graciously declined, preferring to sit and enjoy a Japanese Garden while the rest of the party went underground. Later Robens asked Fritz why he had not wanted to view the Japanese pit. 'Well,' Fritz explained, 'I had a look at the safety statistics and it was clear that one in seven was injured every so many days so I came to the conclusion that it was not a risk I ought to take. And', he added, 'one man came up with his head bandaged.' This story would have been amusing had it not been for the fact that two weeks later an explosion in that very mine caused the death of 450 miners.

The task of the statistician, Fritz believed, was to produce figures that led to action. This required a certain change of image for the statistician. Their status should correspond to the key role they played in every part of the industry. With clear and useful statistics, Fritz could enter into the whole spectrum of coal extraction, transportation and sale and see where the problems lay. With this tool he could point to areas which previously had been the domain of men with particular expertise and experience such as mining engineers, geologists, and colliery managers, and alert them to problems they had not recognized.
This resulted in a number of battles. Mining engineers were not too keen on being told what to do by a remote figure in Hobart House. Fritz understood this and tried to let the figures do the talking. It was as clear to him in 1963 as in 1951, when he had written to his parents that, 'The most wonderful machines are of no use at all if the workers don't feel like working', that the maximization of output depended on the full utilization of the available cutting machines. It did not matter if the industry had the finest cutting machines in the world. If they were not cutting, then money was not coming into the till. The problem was pinpointing the most significant obstacles to continuous cutting.

Fritz was sure that factors other than the organizational and engineering difficulties were causing stoppages. The output statistics, which had been based on output per pit, covered too large and too diverse units to be useful indicators of where the bottlenecks were. Fritz's hunch was that the crucial statistic would be the coal faces themselves - tons per face per day: he homed in on details to verify his hunch - use of machinery, distribution of pit props, methods of working, shift patterns, shaft capacity, transport in the mines. The figures built up a picture which showed him that output was related to the length of the coal face. As soon as the length of a coal face dropped below a certain level, output per day fell considerably. The reason turned out to be simple. In a short coal face the miners had to spend more time cutting into the rock face at either end of the coal seam to allow space to turn their machines than they were able to spend actually moving along the face cutting the coal. He had quite a battle persuading the mine managers that faces under a critical length should not be opened up.

He did not even have the full support of the Board, some of whom disputed the significance of his tons per face per day statistic. Eventually he achieved his aims by subtle methods. He insisted only that a record should be kept of all working coal faces where output was less than about 200 tons a day. This record should be open at all times for visiting officials from Headquarters who could ask the Pit Managers to justify continuing to work on an unproductive face. The point was made without a public showdown. Short faces were soon eliminated. In 1966 forty-three per cent of coal faces produced less than 200 tons a day and together accounted for less than ten per cent of total output. Between 1966 and 1968-9, the number of faces worked fell from 2,000 to 649, whereas output fell only from 174 million tons to 109 million tons. Colleagues in the Statistics Department marvelled and commented that when Fritz wanted his way, 'Machiavelli wouldn't have stood an earthly.'

He came up with other astonishing conclusions in the area of safety. Accidents at the pits were generally put down to geological factors. This would have suggested a certain randomness in the figures for accidents above and below ground but Fritz found that far from randomness there was a perfect correlation between accidents at the pit head and in the pit itself. Pits with high accident levels below ground also had high accident levels above ground. Good records below ground were similarly good above ground and the same correlation could be found all along the spectrum from the good pits to the bad pits. This pointed inescapably to the conclusion that accidents were not largely a factor of geology but a function of management, high standards and care. Accidents above the ground were caused by sloppy, messy conditions, in other words, bad management. The fact that such pits also had high below-ground accident levels suggested that standards might be similarly low in the pit itself. The Board, however, did not at the time take much notice of this discovery.

The close contact Fritz had with the actual workings of the industry after 1963 deepened his understanding of the needs that had to be recognized in restructuring the organization. When, in 1965, a committee was set up under the chairmanship of Harry Collins to make recommendations for streamlining the industry Fritz was very glad to serve on it and again put before the committee ideas which he had worked on in the 1950s. The principles of large-scale organization, which had developed out of his thinking on ownership, the function of work, and the necessity for freedom and control in industry, played an important part in the reshaping of the coal industry. His reorganization of the Statistics Department was already a major contribution towards unobtrusive control. The committee then went further in removing some of the bureaucracy that had developed over the years, reducing the management
tiers from five to three and so shortening the lines of command throughout the industry. This helped create what Fritz felt to be of fundamental importance in large-scale organization, namely the possibility of greater freedom for initiative at lower levels in the industry. 'If they can do the job within their own freedom and responsibility,' he wrote, 'let them do it; take the risk. This is the only way to safeguard human dignity, but also, in the end, to get the best performance out of people.'

Although his Area Bank Accounts idea of 1958 was not resurrected, the areas were organized into quasi-firms, including not only the deep mining function of the Board but also its subsidiary industries. Each quasi-firm had its own balance sheet which was carried forward each year so that it was very clear whether or not it was performing satisfactorily, and it was left alone unless its performance was not up to scratch. Those who performed well were given greater responsibility, those who did not perform adequately had to have a valid reason for not doing so if they were to be allowed to continue holding the responsibilities which they had been given.

These changes combined both tighter control, by shortening the lines of command, and greater freedom at the day-to-day level of operations. For this to work satisfactorily Fritz said there was a further principle which the industry would have to follow. He called it the principle of the Middle Axiom. It was not something which could be written into the instructions on how to reorganize the Board, for it meant wisdom and understanding the Buddhist Middle Way. It was the art of transmitting instructions and orders without appearing to diminish the freedom of those under command. In other words, the art of reconciling the irreconcilable opposites of the need for freedom in the organization and the need for control. Fritz thought the answer, in so far as it could be laid down, lay in the sort of action he had taken to implement his recommendations about coal face length. Another example occurred when Fritz wanted to improve the safety measures at the collieries. Left to themselves, some Area Managers would let things slip, yet direct orders from the Board would lead to all sorts of problems. Fritz's solution was to ask the Area Managers to submit statistics about their safety standards. With sufficient time to