

The Channel tunnel, 1955–75

When the Sleeping Beauty woke again

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The aftermath of the Second World War could have brushed aside for years the greatest engineering project of the century: a railway tunnel under the Channel. In 1875 two companies had been granted a concession in France and special powers in England for this purpose. After a failed attempt in 1883 both had slowly lost influence. The London office had been bombed during the blitz. Air and road transport were in competition with rail. The Channel tunnel was the Sleeping Beauty of its main shareholders, the State-owned French Railways and the Southern Railway Company in Britain, both of which had other priorities. As early as December 1945 a question was asked of the Minister of Transport, with little success.¹ Lobby groups in both parliaments were divided. Notwithstanding, interest remained high. The lack of a Channel tunnel had been cruelly felt during the retreat from Dunkirk and the project could prove useful for the economy and strategy of the emerging Western Europe.

This article focuses on the post-war period up to 1975, which covers the design, promotion and first failure of the twin bored tunnel for car shuttles and through trains. A substantial part of today's Channel tunnel engineering, management and finance originated during these two decades. Colonial crisis, European construction freezes and oil embargoes were reflected in the stops and goes of this great transport infrastructure project. The scope of the article is limited to corporate history, with the necessary insights into government relations. Several books on the Channel fixed links discuss the geological and technical arguments for the competing schemes. A full history of the various Channel projects still has to be written from the numerous consultants' reports produced in the last seventy years. This article will reassess the role of the Channel Tunnel Study Group in the light of new material.²

Official contacts between both Channel tunnel companies were resumed in January 1947, and parliamentary groups were formed soon afterwards. Railway nationalisation encouraged closer co-operation between the British Railways Board and the SNCF. The British Transport Commission (BTC) at that time owned 26.3 per cent of the capital of the Channel Tunnel Company Ltd, and customarily nominated a director on its board. The new chairman, Leo F. A. d'Erlanger, was a francophile Catholic and europhile Tory.³

As a private banker in the City he also commanded the necessary influence to find investors. The cost of the project was estimated at £40 million by the promoters, between £50 million and £60 million by the *Railway Gazette*. A motion was put at Westminster in March 1949.

Supporters of a road tunnel argued that the Channel tunnel companies had not changed their design since the 1930s. The French promoter André Basdevant⁴ and his British ally in Westminster, Ernst Thurtle, defended a large-diameter project considered to be unrealistic. It was nevertheless strongly backed by the Union routière de France and its president, Georges Gallienne, and even scrutinised by Supreme Headquarters, Allied Powers in Europe (SHAPE).⁵ The debate lasted a few months, but powerful arguments, like the cost of a large-diameter tunnel or ventilation problems, gave the advantage to rail. Aware of this crucial issue, both engineers-in-chief of the State railways had suggested a few modifications to the existing plans, but nothing like a drive-through tunnel. Mainly because of ventilation problems, a tunnel could not offer a satisfactory solution for motor traffic. The first roll-on-roll-off car ferry did this in 1952.⁶ It was something of a revolution on the Channel crossing.

It is no coincidence that the tunnel was frequently debated in the early 1950s. The French Président du Conseil, René Mayer, a railway man related to the Rothschilds, used his position and the conference on transport co-ordination of March 1953 to advocate the cause. Other supporters on the French side were the Minister of Transport, Jacques Chaban-Delmas,⁷ the SNCF chairman Louis Armand⁸ and Joseph Laniel, a political figure of the Fourth Republic related to the Fougerolle public works entrepreneurs.⁹ Paul Leroy-Beaulieu was then an economic adviser at the French embassy in London. He was a director of the French Channel tunnel company and the great-grandson of its first president, Michel Chevalier. The ambassador, René Massigli, welcomed the idea: the fiftieth anniversary of the Entente Cordiale was an excellent time for a revival. Louis Armand lobbied Hugh Molson¹⁰ when he attended the conference of European Ministers of Transport in Paris in October 1954. Although a convinced aeroplane man, Molson promoted the idea in London, but the Minister of Transport, Lennox-Boyd, was openly hostile. The BTC thought the tunnel would be profitable for neither passengers nor goods.¹¹ Last, but not least, part of the Conservative government stuck to the 'old strategic objections' that London had advanced since the early 1880s. It was a complete surprise when the Minister of Defence, Harold Macmillan, removed them all during question time in the Commons on 16 February 1955. With this brilliant *coup* against seventy years of procrastination a major political risk was removed. Promoters seized the opportunity to activate the search for financial and industrial partners.

A new deal, 1957

Many personalities involved at that time could claim to have introduced the bride. Leo d'Erlanger met Paul Leroy-Beaulieu frequently in 1955 and 1956.

The latter had good contacts with the Suez Canal Company, whose main shareholder since 1875 was the British government. No company was better structured for an Anglo-French venture, and its chairman, Jacques Georges-Picot, became deeply involved. When the Nasser government nationalised its main asset the Suez company began to negotiate compensation. Extensive internal debates occurred over the financial and industrial strategies of the Suez company. A committed defender of the Common Market, Jacques Georges-Picot hoped that the tunnel would be built and operated by the first private company under European law, a fashionable idea which did not become reality. He wanted the new *Compagnie financière de Suez* to have the best of it.

American investors appeared at the end of 1956, though officially they stepped in in July 1957, embodied by the lawyer Franck P. Davidson and the arbitration director of the New York stock exchange, Cyril Means. Acting on behalf of an obscure firm, Technical Studies Inc., they knocked on the door of Suez head office. The founding fathers of Technical Studies were two directors of the leading US merchant banks, Dillon Read and J. P. Morgan. The story goes that Franck Davidson's wife and her sister had felt queasy crossing the Channel. As a result their wealthy husbands decided to reactivate the Channel tunnel project.¹² They had appointed the consultants Brian Colquhoun & Partners in London to assess its feasibility and the consultant was in favour.

On 26 July 1957 the Channel Tunnel Study Group was formed as a joint venture between the two tunnel companies, *Financière de Suez* and Technical Studies. Its aim was to undertake all necessary technical investigations and economic research and to find investors for the project. The shareholders ranged from the two national railways up to the Banque Rothschild, from the beginning a major player in the project. The former ambassadors Sir Ivone Kirkpatrick and René Massigli were elected co-chairmen. For the first time the tunnel project had a single promoter, if divided into two national groups, and was not restricted to Anglo-French interests, though its US shareholder kept a low profile to avoid discrimination.

The Study Group had no legal personality, no assets or liabilities, not even a registered auditor. Its members brought £225,000 to the venture and were bound to share income and charges. The Suez company provided 25 per cent of the funds and three directors. Technical Studies brought 10 per cent and increased its stake to 25 per cent the following year. The national railway companies shared the rest. New York bankers and engineering firms showed increasing interest in the tunnel scheme. An executive of Bechtel Corporation and vice-chairmen of Dillon Read and J. P. Morgan¹³ were members of the executive committee. They appointed the engineers Harold Harding (later Sir Harold) and René Malcor¹⁴ to carry out the studies. A lawyer from the Suez company and former adviser to the European Coal and Steel Community supervised law and organisation. They were all famous personalities. The Study Group kept in touch with the European authorities, as it did with transport administrations from Germany, Belgium, Holland and Denmark,

lobbying actively to suggest road improvements and gathering macro-economic data on road traffic. Deeply conscious of the past misunderstandings, this pioneer European corporation proved its willingness to work in close co-operation with the governments in order to avoid delays and suspicions. Jacques Georges-Picot explained the roles once and for all: 'Technical Studies has an important role to play in the United States to propagate the idea of a Channel tunnel; but propaganda in England must be done by the British group, and in France by the French group.'

The highest expectations, 1957-63

'All seems to be going very well indeed,' said Cyril Means jubilantly when the Sangatte shaft was reopened in summer 1958. But the railways were cautious. In March 1957 M. A. Cameron published a confidential report for the BTC which dealt with a rail tunnel in which road vehicles would be accommodated on open flat wagons, like those used by the Swiss railways. Such a tunnel would expose the existing train ferries to road competition. The SNCF estimated the cost of the main tunnels at £72 billion, terminals and equipment not included. It should divert £7 million of receipts from the ships, and generate about another £5 million turnover. The total estimate of gross receipts was £12.5 million. The project should yield 5 per cent per annum on capital cost. The total yearly costs would then reach the vast sum of £10.9 million for amortisation and interest, whereas train operating would cost about £750,000 and maintenance £300,000. The tunnel was not seen as 'an attractive investment' by the BTC, which earned revenue from shipping services. In addition to the financial aspect, railwaymen were very aware of the intricate problem of electricity supply: 660 V d.c. through a conductor rail on the Southern Region of British Rail, 25 kV a.c. (50 Hz) from overhead wires on the SNCF network. British Railways Board representatives estimated that upgrading the Dover to London line to Continental standards would cost £80 million to £100 million. The rail link problem was born, but not solved.

The report underlined that the project enjoyed 'considerable support' in both countries and favoured an international authority to manage it. It would be 'a positive indication of the unity of Britain with the continent'. The British Ministry of Transport said informally that it would be satisfied if the United Kingdom was represented in any project by the Channel Tunnel Company Ltd. The question of compensation to maritime services was 'largely a political one'. The report was informally transmitted to the SNCF, which relayed it to the French Study Group.

The promoters wanted to start from scratch. A deadline for the cost estimates was set at 1 May 1959. Shortly afterwards, a seismic soundings programme over two years was voted 300 million francs, using new technology in order to confirm the feasibility of a tunnel in the Lower Cenomanian chalk, and make data available to the engineers and geologists. Three economic consultants were selected, against the advice of Louis Armand, who favoured

a more flexible organisation: the Economist Intelligence Unit (EIU) in London, the Société d'études techniques et économiques (SETEC) in Paris and de Leuw Cather & Co., of Chicago, a firm considerably experienced in transport surveys, recommended by the Société de construction des Batignolles. The US economist W. P. Hedden co-ordinated the studies. He had worked for the Port of New York Authority and developed studies in the field of bridges, tunnels, bus termini and airports like La Guardia and Newark. Last, but not least, he had advocated the 'ability of large new projects to support themselves from earnings', an accurate definition of what would later be called 'project financing'. The British government made all data available to the Group, but refused to nominate any official expert in order to retain its neutrality. 'You can imagine that the financial plans were just as complicated as the geology,' remembered the lawyer Alfred Davidson, brother of Franck. 'We got whole books on the telex: if you do this, what will happen, if you do that ...'

To lend reality to Louis Armand's fears, the three consulting firms had different econometric approaches. It soon appeared that the SETEC and de Leuw methods were close to each other, whereas the EIU worked on a more pragmatic basis. An unexpected crisis began with the first results, in January 1959. SETEC had established a diversion traffic theory for passengers, which plainly assumed the cessation of most ferry lines. The studies gave accurate results for passenger traffic, and René Malcor judged they 'would mark a date in the history of this particular technique'. Nothing of the sort came from the EIU. In a confidential letter to Technical Studies, René Malcor passed severe judgement on the EIU's research methods¹⁵ and his counterpart in de Leuw considered not co-signing the report. They were both conscious, notwithstanding, that it was most important for a British firm to be involved: 'The British firm has been selected more for its political influence than for its scientific achievements,' wrote René Malcor. 'Remember also that the psychological difficulties regarding our project are located on the other side of the Channel.' Both knew that, should de Leuw not sign the economic report, US bankers would not go into the project. As the French and American firms were 'eye to eye on this problem', SETEC would also refuse to sign, with the same consequences for the French banking community. That would freeze the venture.

In addition, US bankers insisted on leading any syndicate which might be formed in the United States, which Lord Harcourt, a member of the supervisory committee of the Study Group, judged 'quite unacceptable ... This question of leadership in the American banking world is one which is constantly cropping up, and which is extremely tiresome,' he wrote. Lord Harcourt was convinced that it was wrong to prejudice the free choice of financial agents. The dispute put at stake the role of Technical Studies in the Group.

No fewer than five consulting firms – three British, one French and one American – carried out civil engineering studies.¹⁶ There, too, the French insisted on respecting 'to the utmost the French–British parity'. The French geologist first chosen was replaced by an English one, and it was decided to

translate all documents into English in order to avoid misunderstandings. A considerable amount of data was collected and several examples of bored and submersed tunnels, bridges and hybrid configurations were thoroughly scrutinised. The choice depended on the construction costs and estimated receipts of the proposed systems. The ventilation of drive-through tunnels was still unresolved, hovercraft were unreliable and a bridge proved to be the most costly in addition to the hazards it would create for the busy local navigation. By the end of 1959 the Study Group had declared its preference for a 21 ft diameter twin rail tunnel with a service gallery. Faults had been located in the Cenomanian chalk in Dover when the harbour had been enlarged to accommodate ferry traffic. They could be dealt with by pumping cement in, or by freezing the ground before lining.

The plans were surprisingly detailed for such an early stage. The London to Paris journey by train through the tunnel would take four hours twenty minutes. The average speed of through trains would be 112 km per hour. Car shuttles would run at 88 km per hour between Sangatte and Folkestone, freight trains at 64 km per hour. Loading the shuttles would take twelve minutes, unloading nine minutes, thanks to a closed loop.¹⁷ A cost estimate by promoters, probably from 1959, gives a sum of £104 million,¹⁸ including provision of 20 per cent for contingencies. The new British Rail terminal could be located in Guildford, because of the good connections with London, the Midlands and the north. It was acknowledged that the existing line would not handle the traffic, and that the cost of a new and separate line would be high, but the question was left open.

The governments did not want to confirm any choice at that stage. When, in 1961, the British Minister of Transport, Ernest Marples, was asked what system he preferred, he bluntly answered, 'I never bet on a horse without having seen its previous victories,' which made it hard for the Channel tunnel. Several lobbies put their case forward. The first criticism of the twin-bore tunnel with a railway shuttle service came from André Basdevant. This opponent of the Study Group described extensively the dangers passengers would face hurtling through the tube at 100 km per hour sitting in motor cars with full petrol tanks. He added that all the benefits of the system would go to the railway companies. Seamen began to lobby against fixed-link projects. In December 1961 the United Kingdom Seafarers' Organisation published a brochure and held a meeting comparing the various cross-Channel modes.

Could ships offer higher capacity? The Study Group forecast 675,000 vehicles for 1965 and 1,127,000 for 1980 (buses included). Peaks would be 638 vehicles per hour in 1965, 1,065 in 1980, with a theoretical maximum capacity of 1,800 vehicles per hour. Shuttle services would carry respectively 3.2 million and 4.8 million passengers, freight trains 1.2 million and 1.6 million tons. No one believed there would be a significant diversion of freight. Accompanied vehicles were said to represent the most dynamic and profitable traffic, and Roger Hutter, the SNCF man, insisted on introducing double-deck shuttles as soon as possible. The most modern ferries then carried 160 cars and achieved six trips a day. Because of their competition, Roger Hutter

also recommended low fares in the first months of working. Flexible tariffs depending on transit time were abandoned for political reasons. The Study Group reviewed many marketing issues in detail but revenue expectations were not always realistic. At the eightieth annual general meeting of the Channel Tunnel Company in 1961 the chairman, Leo d'Erlanger, predicted that freight rates would be cut by 50 per cent from the day the tunnel was opened, and that the tunnel 'would require only a small amount for upkeep', whereas more expensive ships would incur higher costs.

Traffic and tariff calculations gave no accurate indication of the financial profitability of the project. A meeting of the European Ministers of Transport in 1958 wisely agreed that interest rates 'could vary a great deal' up to the beginning of the work. In March 1960 the rail experts estimated operating costs at 5.7 million francs, including debt service at 5 per cent. Gross receipts would be 5.1 million. The project would be profitable in 1980, with 6.65 million operating costs and 7.9 million gross receipts. As both governments refused direct financial participation in the project,¹⁹ the promoters prepared to raise £130 million on the financial markets, the official estimate for the whole venture including terminals.²⁰ Shareholders would contribute 20 per cent and assume the full risk. Bond holders would be guaranteed by the governments, but no details were given.

A governmental bilateral working group was formed in 1961 to assess the different cross-Channel modes. A year after, the estimate of the debt interest jumped to 6.5 per cent, following a rise in the money markets. Tunnel promoters and bankers were aware of the high financial risks that such works carried, owing to their lengthy completion time, and they awaited the official report impatiently. Engineers of the Study Group and Jacques de Voguë, General Secretary of the Suez company, several times visited the promoters of the tunnel under Mont Blanc, whose cost at 140 million francs was comparable to the Channel tunnel's estimated cost. Everybody knew that the initial budget for the Mont Blanc tunnel had been 50 million francs. The governments had subsidised 40 million and the company holding the concession had borrowed 100 million. Ventilation, materials and explosives represented 80 per cent of the overrun. Extrapolating the Channel tunnel costs from the Alpine venture was thoroughly frightening. No reasonable solution had been found to the problem of containing the cost of the Mont Blanc tunnel. A last-minute agreement had allowed the two concessionary companies and a co-ordinating committee to hand over to the operators. It was not a good omen.

A good concept seeks its management, 1963–69

From 1957 to 1965 the promoters alone financed the venture. They admitted it would remain in their hands after completion. The Erlanger family still owned slightly less than 4 per cent of the Channel Tunnel Company, whose issued capital was worth £122,000. The Channel Tunnel Company had invested £30,250 in the Study Group, the British Railways Board £30,000 and the Erlanger family £6,000. The bankers of the group²¹ had paid £2,000

each. At the end of 1963 the French group put some money into public relations, an activity which had so far been neglected. An article appeared in the news magazine *Paris-Match*, with drawings of the terminal. The SNCF produced a model of the project, which had a great success at the Galeries Lafayette department store and Palais de la Découverte hall. An eight-minute news film was made by Pathé-Actualités.²² Léo d'Erlanger judged this action 'disproportionate both to what would seem to be required in France' and to the English group action. Still, he asked for an English soundtrack of the Pathé film. 'Presumably, the additional cost would be negligible.'

The only potential competitor after the late Basdevant project was a bridge design defended by the former Minister Jules Moch.²³ It cost twice the tunnel price, had little financial backing and suffered from the news of a ship colliding with a bridge in Venezuela. The French administrations remained sympathetic to the Study Group: 'The atmosphere in official circles here is as good as can be,' wrote Jacques de Voguë in March 1963. There was no political will at governmental level and it was an accepted rule that nothing should be done to shock British opinion. Officials of the French Treasury declared in private that the tunnel was in conflict with higher-priority projects and with French policy relating to dollar balances. Three Ministers of Transport had been in post since the soundings had begun, not all of them urging the matter. In Britain the opposition had to be consulted, and the Minister of Transport, Ernest Marples, invited people to write to his Ministry on the subject.

General de Gaulle was regarded as a supporter of the idea, but members of the Study Group admit he never committed himself to a firm decision on it. His first veto on British entry to the European Community had little influence on the venture, since the White Paper²⁴ concluding the binational working group study favoured a twin-bore shuttle tunnel. This conclusion was reinforced by a joint statement of the Ministries of Transport, early in 1964, describing a rail-only tunnel as 'technically possible' and 'a sound investment'. It hit a peak in British opinion. Each government subscribed £1.25 million for soundings to be taken, starting in the summer. This was highly significant to the promoters, who had spent roughly £1 million since 1958. But it gave them no assurance of being chosen later. Jacques Georges-Picot indicated that the Study Group was ready to finance additional soundings should the government give assurances that it would grant a concession. In Georges-Picot's thinking, the Study Group would form a limited company once the concession was granted and transfer the finished tunnel to an operating company.²⁵

One of the main issues at stake was the financing of an offshore platform, which the Study Group had refused to endorse. It would cost £50,000. The adviser in charge of the Channel tunnel question at the Ministry of Transport was 'extremely perturbed' about this requirement. 'With Ministers of the British government in their present mood, this might well lead to a wholly adverse view being taken of the project, and possibly lead to its cancellation,' he said. In private conversation a French official deeply regretted the promoters' attitude, and asked for more initiative from the Study Group in order to justify a governmental decision to grant it a concession: a typical

chicken-and-egg problem. This political uncertainty led to overreaction on the promoters' side. In November 1964 the executive committee observed that the new British government had not changed its mind on the subject, and in addition to the British being lukewarm the French representative of the Ministère des transports, M. Lacarrière, also seemed to be more reticent. They explained the fact by the British reserve about Concorde. Later on, the French Minister of Public Works made an encouraging speech in the National Assembly.

Technical and managerial difficulties culminated with the 1964 seismic survey. Oil companies were far more attractive customers for the seismic companies and required high capacities at that time. The Study Group blamed the contractors for their lack of organisation and the incompetence of the ship's crew. The Spanish sailors and the British geological team did not always get on well. Relations between the contractors and the supervisory board were tense. Partners and managers of the consulting firms often had to intervene directly. Their engineers admitted that they were trying brand-new methods and equipment, and had to proceed by successive experimentation. An American director of the Study Group complained about the poor results obtained. Lastly, the Franco-British character of the programme made it difficult to manage: part of the rising cost came from duplication of some activities. French adversaries of private financing seized the opportunity to declare that the whole thing should be managed by the roads and bridges administration.

During a storm in the cold winter of 1964–65 two boats loaded with geophysical instruments sank in Calais harbour. All in all, the survey lasted twenty-two months instead of fifteen. The first three soundings had cost £130,000 instead of the £30,000 forecast. The cost of hiring the ships multiplied threefold between 1959 and 1964. The engineers' fees jumped from £120,000 to £243,000, and the soundings themselves cost £28,000 extra. The final geophysical results were excellent. They confirmed the various qualities of the Cenomanian chalk. Surprisingly, the total cost of around £2.2 million was within the generous budget fixed by the governments.

The most difficult phase for the Study Group still lay ahead. In order to obtain a concession, René Malcor insisted, continuity was necessary between seismic campaign, system definition and contract preparation. The know-how of whole teams would be lost, he said, if there was a gap between these different stages, and the whole process would be delayed. His arguments received no endorsement. British experts and civil servants wanted to throw the concession open to public tender. Conservatives feared that British Rail would gain too much influence over the project. Treasury civil servants – and their French counterparts – said that it would be too heavy a burden for the financial markets. None of them was ready to delegate its operation to independent private interests.

In July 1966 Prime Ministers Harold Wilson and Georges Pompidou announced their governments' decision to proceed with the tunnel. Georges Pompidou, a former executive of the Banque Rothschild in Paris, was familiar

with the project. It was decided that the works would be delegated to a private firm upon open tender, and operated by a binational public authority, which would define the commercial policy of the tunnel and guarantee non-discrimination. The Study Group's hopes were severely shaken. Ninety per cent of the financing would be guaranteed by the governments. The railway companies obtained the guarantee that no separate network would be created.

Bids were invited in February 1967, and three candidates applied in July: the Study Group, a public works group led by the Banque de Paris et des Pays-Bas, and an industrial group led by the Banque Louis Dreyfus. For the next three years the project was on hold. These were troubled years on the international scene, with the Prague Spring, the troubles of 1968 in France and other problems. The key problem for the Channel tunnel was again management. In November 1968 the British Minister of Transport, Richard Marsh, publicly recognised that the choice of a candidate was extremely difficult. This sounded like a warning. Soon afterwards, the three contenders were asked to develop a common proposal. A merger was the only way to ensure strict balance between British and French interests. It left to the private sector the technical, geological and political risks; the governments would help with commercial and financial risks. This was a further blow to the Study Group and a bitter pill for Technical Studies, which was estimated to have put £117,075 into the venture between 1957 and 1970. One of the most dynamic partners was thrown out of the game, and was still claiming financial compensation in the 1980s. The joint proposal of the new Channel tunnel group was duly submitted to the governments in July 1970. American interests were restricted to a 2.76 per cent shareholding by three US merchant banks.

'Much ado for nothing'? 1970-75

The twenty-one shareholders of the Channel Tunnel Group were split into the British Channel Tunnel Company PLC and the Société française du tunnel sous la Manche SA, which compelled the historic Channel Tunnel Company Ltd to register as Channel Tunnel Investments Ltd. The Channel Tunnel Group was officially designated to build and operate the tunnel in March 1971. Morgan Grenfell²⁶ and the mining company Rio Tinto Zinc Corporation were expected to play a considerable role in the new group, which lacked a project management capacity. RTZ Development Enterprises had selected consulting firms to carry out the new studies. General Philippe Maurin led the French sub-group. As Jacques Georges-Picot had lost all interest in the project, he brought in the Compagnie générale d'électricité (CGE)²⁷ to counterbalance RTZ.

On the political side, Britain and France were both under new governments. President Georges Pompidou had succeeded Charles de Gaulle in 1969. Edward Heath's Conservative Party won the 1970 general election. Both pushed the tunnel ahead. They were committed Europeans, like their Ministers of Transport, John Peyton, Jean Chamant and his successor, the anglophile

Pierre Billecocq. British integration into the Community, agreed in October 1971, was a historical event of the greatest importance for the project.

The month before, the two governments and the companies had agreed on a draft proposal on financing and construction. In 1972 and 1973 experts from both countries did intensive and innovative work drafting legal documents. This had not been done since 1872. English law has a *jurisprudens*, French law has a Code. The difficulty of forging common texts from two very different legal systems was one of the challenges of the tunnel. Witnesses remember the tough negotiations and constructive work involving such subtle notions as public trustees and *service public*, *Etat* and government. It took hours to choose between the concepts of *force majeure* and exceptional risk. 'Oh, you *mean* force majeure!' the head of the British delegation finally exclaimed. The operating authority looked like a French State-owned company, but many conceptions derived from English practice. When no solution could be found, Swiss law prevailed as a substitute. The Ministries of Transport, the Foreign Office and the *ministère des Affaires étrangères* intervened in the final stage of the drafting. In the last weeks of the negotiations the British delegation asked for a change in the exit clauses: in the case of unilateral abandonment by one government, both governments would be responsible. This meant they would both indemnify the companies. The French delegation accepted the request, which had become a *sine qua non* of continuation.

These negotiations resulted in agreement No.1, signed in October 1972. The companies would assume fully their share of the risk. The project implementation was divided into three phases. The results of the new studies were to be submitted by July 1973. A second agreement and a treaty would then be signed and a 2 km-long trial gallery bored from each side at a cost of £30 million. The third phase was completion of the tunnel from 1975 to 1980. Unlike the Concorde agreements, the project could be interrupted at any time in the event of a major technical problem or if the return on investment fell below expectations. The companies could claim that the governments had abandoned the project if the treaty was not ratified by 1 January 1975.²⁸ If the governments were responsible for abandonment, they would indemnify the companies. Throughout the construction period the administrations checked the costs, approved the contracts with the constructors and controlled equity transfers.²⁹

Technically the project was similar to the twin-bore tunnel proposed by the Study Group in 1960. Financial and economic studies were published ahead of the deadline, in May 1973. They forecast that the return on investment would be satisfactory even on the most pessimistic assumptions. The gross margin on the equity was estimated at 22.4 per cent. Six million accompanied and 9 million unaccompanied passengers were forecast for 1981.

Opposition to the project had been muted since the war. It grew from 1971 onwards. Among the leading trade unions the National Union of Railwaymen was the only one in support. The National Union of Seamen and the Marine Officers' Union NUMAST federated local and environmental groups

into the Channel Tunnel Opposition Association. They were encouraged by Townsend Thoresen of European Ferries and the Dover Harbour Board. The group appointed consultancy firms to construct their own financial estimates, not surprisingly more pessimistic than the promoters'.³⁰ Arguments about safety and rabies came to the fore. Keith Wickenden, chairman of European Ferries, led the battle.³¹ The group did not succeed in uniting all potential opponents. British Sealink, Sealink France and Folkestone Harbour stayed out: their main shareholders were the national railway systems. Roland Wickenden, Keith's brother and business partner, was lukewarm. He looked kindly upon an association with the tunnel promoters. The Dover Harbour Board was not keen on offensive lobbying. The cost-benefit analysis by Cooper's clearly concluded in favour of the Tunnel. On the French side there was 'scarcely any [opposition] at all'.

The agreements and treaty between the governments and the companies had to go through Parliament. The Labour opposition approved the project in June 1973, while commenting that it was encroaching on social programmes and giving too much emphasis to the south-east.³² Some of its members favoured a rail-only link and were strongly opposed to 'any associated terminals for handling road traffic'.³³ The Liberals also argued against it.³⁴ In October 1973 the Channel tunnel Bill won a majority of 56 out of 430 votes, and a few days later the French National Assembly approved the financial planning. The Bill received the royal assent, allowing the Ministers of Transport to sign agreement No. 2 and the treaty on 17 November 1973. The treaty was a diplomatic text which created a Channel Tunnel Authority, with a fifty-year concession. The agreement was a complete description of the relations between the parties. The total costs, including the financial costs, would be £846 million, a threefold increase in current terms on the price published in 1960,³⁵ or the equivalent of two-thirds of the British motorway programme for 1973. Ninety per cent of this sum – the original finance mix – would be in loans guaranteed by the governments.

In December 1973 the Commons approved the Channel tunnel Bill on its first reading with a tighter majority of 18 votes out of 388. The project could formally move further into phase two, but the tide had turned with the embargo on oil in October and the general election, which saw the return of the Labour Party, headed by Harold Wilson, in February 1974. The Labour leader had tabled an ambiguous amendment to the Channel tunnel motion in October. Shortly after the election he had announced to Georges Pompidou that the project could be set aside. The second reading of the Channel tunnel Bill was not complete in February³⁶ and the British Channel Tunnel Company sought to withdraw with compensation for the risk undertaken,³⁷ which was refused. The Channel tunnel Bill was pushed forward by the Secretary of State for the Environment, Anthony Crosland. On its second reading, on 30 April, it won an unexpected majority of 287 out of 350 votes. Georges Pompidou, who was clearly committed to the tunnel, had died after a long illness and Valéry Giscard d'Estaing was elected to the presidency. In London the economist Sir Alec Cairncross was appointed to reassess the cost-benefit analysis.³⁸

In the meantime, work proceeded on the old sites at Shakespeare Cliff and Sangatte. Contractors had found the unlined gallery of 1883 perfectly dry.

Soon after the general election Jack Jones, General Secretary of the Transport and General Workers' Union, had bluntly asked the government to stop the project.³⁹ He regretted that British companies would lose their leadership in the cross-Channel traffic. Jack Jones may have been the author of the dreadful saying that in the event of a fire 'the tunnel would cease to be a cross-Channel link and would become a thirty-two-mile-long coffin'.⁴⁰ The union wanted at least one of the major projects launched by former governments to be abandoned: Concorde, the Channel tunnel or Maplin airport. Concorde had already cost three times the budget of the Channel tunnel, and the Minister of Industry, Tony Benn, defended his constituents' jobs in a famous debate in the Commons in March 1974. Valéry Giscard d'Estaing defended the supersonic aircraft too. Little had been invested in Maplin. The tunnel, an 'underground Concorde',⁴¹ was in the wrong window of opportunity.⁴²

The high-speed rail link to London

A new rail link between Folkestone and London White City was foreseen, as the overworked South East network of British Rail could not accommodate both the existing commuter traffic and the new cross-Channel traffic. Loading gauge and current supply remained major technical obstacles. Some road improvements were necessary. The M20 would have to be extended from Maidstone to Folkestone. The French government had agreed to undertake the construction of a motorway from Calais to the existing A1 between Paris and Belgium. The first French high-speed train was planned between Paris, Brussels and the tunnel.⁴³

Once the tunnel had received the official go-ahead in September 1973, opposition focused on the high-speed link.⁴⁴ The British Rail publication *Noise and the Channel Tunnel Rail Link*, in 1974, aimed at dissipating widespread fears. Environmental considerations slipped to the background when British Rail published its new cost estimate, in November 1974. Engineers had sketched out a system to provide a high-quality service between London, Paris and Brussels.⁴⁵ The management of Network South East had a reputation for independence. British Rail's chairman, Richard Marsh, declared himself surprised by the result of his teams' work: £373 million for a new line, instead of £120 million in 1973 for upgrading the existing line, roughly half the price of the tunnel itself but for publicly financed infrastructure. The investment needed to cope with the increasing ferry traffic was not considered.⁴⁶

In October 1974 Labour won the second general election that year with a more comfortable majority. A motion was moved in favour of the hybrid Bill procedure,⁴⁷ in order to reach the statute book in time for the treaty to be ratified before the deadline of 1 January 1975.⁴⁸ The opposition strongly opposed the motion, which was approved notwithstanding. Anthony Crosland asked British Rail to reduce the railway link costs. An alternative with sufficient capacity until 1980 was drawn up, cheaper by £100 million.

It was judged unacceptable by the Department of Transport because it was of such poor quality. It was then definitely too late to ratify the treaty between the governments on time. On 26 November, after informing his French counterpart, Marcel Cavallé,⁴⁹ Anthony Crosland announced that the parliamentary procedure would be delayed by a year, in order to reassess agreement No. 3, and to find a cheaper solution for the rail link. This was adhered to, even when the French government decided to go ahead with its own procedures.⁵⁰ Marcel Cavallé took note of the decision and the French parliament approved the Channel tunnel law on 16 December 1974. Confidential negotiations began between shareholders and the governments, which proposed 'a short standstill agreement designed to protect the interests of all parties during a negotiation period lasting into the spring'.⁵¹ The promoters and the governments disagreed on all points.⁵² On 2 January the companies officially advised the governments that they no longer regarded themselves as bound by the agreements reached in 1973. They put forward new proposals as a basis for continuing.⁵³ Abandonment was resolved upon in a Cabinet committee meeting of 16 January 1975, on the grounds that these proposals and the associated financial conditions were unacceptable.

Four days later Anthony Crosland announced to the Commons that the government accepted that the project had been abandoned,⁵⁴ a decision greeted with approval by the press. In view of the repeated promises not to take any decision without Sir Alec Cairncross's reassessment, or without a debate in the House of Commons,⁵⁵ the announcement after the deadline was received badly by many MPs.⁵⁶ 'Most of the arguments that have been made against it were made against the Mersey tunnel in the 1930s,' observed Eric Ogden, MP for Liverpool, West Derby. He added that twice the amount of the total compensation, i.e. £60 million, would be invested in ferries to cope with the growing traffic in the 1980s.⁵⁷ The numerous opponents of the project cheered their new victory. A clear majority of 294 MPs voted in favour of the decision, 218 against. Anthony Crosland refused to favour the principle of a Channel tunnel, since the government had given no such assurance before.⁵⁸ In France the press was unanimously against the decision. It was seen as clearly a step backwards on the road to European integration, and the recurrent temptation to leave Britain behind was widely expressed.

Rising inflation in 1974 and related rises in interest rates are the key to understanding the attitude of the companies. Stephen Ross, MP for the Isle of Wight, had visited the works at Folkestone in spring 1974. A director of the company expressed some doubt about whether they would be able to proceed.⁵⁹ Inflation had jeopardised the financial plans and return on investment forecasts. The promoters twice insisted on receiving compensation in 1974 because it was the only way to recover their investment. The governments bought the shares of their respective groups on an equal basis to pay back the funds invested in the last five years. They received compensation of £8 million each.⁶⁰ The data of the Channel Tunnel Study Group returned to the Compagnie de Suez.

'The first lesson [from 1975] is the importance of finance,' said Sir Alec Cairncross.⁶¹ Contrary to the previous withdrawals of 1930 and 1907, when the role of the Committee of Imperial Defence had been decisive, and to a lesser extent of the 1880s, the unilateral British abandonment of 1975 cannot be explained by any major cause. Under the existing agreements the project was officially abandoned by the governments on 21 January 1975.⁶² Actually it resulted from too many other urgent matters requiring priority, such as the economic crisis, the opposition of vested interests, negotiations with the TUC, two general elections in Britain in 1974 and a change of President in France. Neither of the new governments was as committed to the project as its predecessor.

Western Europe faced the most serious economic crisis since the 1930s. Like integration in Europe, the tunnel was seen to increase imbalance between the regions. It would emerge in the reasonably prosperous county of Kent, far from the desolated economies of the north and Midlands. Up to 1973 cross-Channel traffic was growing steadily. This was one of the most pressing reasons for building a fixed link. With the economic recession, and particularly after the first oil crisis, it crumbled against all expectation: 30 million travellers in 1973, 7 per cent less in 1974. In the government, and also among the opposition, personalities like Barbara Castle were influenced by the zero-growth theories of the Club of Rome, and considered that there was 'too much facile access'⁶³ being built.⁶⁴

The United Kingdom was freshly and controversially attached to the Common Market. Part of British opinion rejected this integration, and opposition grew stronger as the economy hit a 20 per cent annual inflation rate. For obvious political reasons there had been no attempt to obtain finance from the European Community before the referendum planned for June 1975, though the Council of Europe and the European Investment Bank were keen on playing a part in the project.⁶⁵ The opposition to the tunnel and European integration were linked with persisting insularity, independent of political party. Anthony Crosland was not considered a Europhile, but Europhile MPs like Sir John Roger opposed the project. He asked instead for urgent improvements to the motorways in Kent.⁶⁶ Roger Moate, Labour MP for Faversham, said, 'It is a tragedy that the whole project has been approached as it has been, but I am sure that the decision is absolutely right.'⁶⁷

The Labour government's management of the crisis between October 1974 and January 1975 was heavily criticised. Roger Moate spoke of an 'extraordinary rush and confusion in the Cabinet and in government circles'.⁶⁸ The crisis was made more difficult as no public inquiry had been held like the Roskill Commission on Maplin airport.⁶⁹ No information leaked out about the negotiations between 26 November 1974 and 20 January 1975.⁷⁰ Some French political leaders preferred to build nuclear plants to preserve energy independence, or high-speed trains promoting French technology. The Foreign Affairs Minister under Georges Pompidou, Maurice Couve de Murville, was lukewarm about the tunnel, and so was the new President, Valéry Giscard d'Estaing, who as a Minister of Finance had had difficult dealings with

the French Study Group. It seemed to Frederick Mulley that French officials 'were waiting for January to arrive'.⁷¹ Neither of the governments actively sought a solution. Anthony Crosland wrote twice to his French counterpart in January 1975 but no meeting took place at that stage.⁷² The Channel tunnel's escalating costs and the battle against inflation were obviously antipathetic to many. Curiously enough, the promoters remained silent. Whether this was due to the shareholders' inability to mobilise mass communications, the desire to maintain a low profile, or even political instructions, the silence did great harm to the project's image. Only 400 yards of galleries had been bored on the English side, 300 on the French, much less than in the 1880s.

Notes

- 1 *Hansard's Parliamentary Debates*, vol. 416, 5 December 1945.
- 2 This article relies heavily on L. Bonnaud, *Le Tunnel sous la Manche : deux siècles de passions* (Paris, 1994) and *Lien fixe trans-manche et relations franco-britanniques: perspectives historiques 1856-1987*, in *Le Prétexé européen 1957-1987* (Sorbonne, 1992). On Channel tunnel history see also K. Wilson, *Channel Tunnel Visions, 1850-1945: dreams and nightmares* (1995), D. Hunt, *The Tunnel: the story of the Channel tunnel, 1802-1994* (Upton on Severn, 1994). I am most grateful to the Compagnie de Suez for opening its Channel tunnel archive recently. It is a precious source on the less well known period of Channel tunnel history. It includes geological studies, technical and scientific data and a wide range of information about the management, finance and government relations. It is the richest archive I know on this theme, along with the PRO RAIL series for the period 1875-1905.
- 3 Interview with SE Geoffroy de Courcel, former French ambassador in London; John King, 'D'Erlanger, Leo Frederic Alfred', in D. J. Jeremy, *Dictionary of Business Biography* II (1984), pp. 80-3.
- 4 SUEZ 03.4, Basdevant.
- 5 SUEZ 07.319, Union Routière. *United Nations World*, March 1953.
- 6 L. Bonnaud, 'Tisser des liens : la genèse des navettes ferroviaires transmanche (1931-60)', *Revue du Nord*, supplement 9 (1995), pp. 161-7.
- 7 His successor was not so enthusiastic, on financial grounds.
- 8 SUEZ 07.361, Conférence de M. Louis Armand au Collège des sciences économiques.
- 9 D. Barjot, *Fougerolle : deux siècles de savoir-faire* (Caen, 1992).
- 10 Parliamentary Secretary for Transport and Civil Aviation.
- 11 SUEZ 02.00, British Transport Commission, 'The Channel Tunnel Project', confidential memorandum, 8 March 1957.
- 12 Confirmed by Franck and Alfred E. Davidson in an interview with the author.
- 13 Alfred Lamont reportedly involved his bank in the venture with the laconic comment 'Well, why not?'
- 14 Of the Polytechnique and School of Mining.
- 15 The delegate of the French Study Group suggested that de Leuw should recommend new statistical standards to the EIU, like sampling and allocation curves.
- 16 The Channel Tunnel Site Investigation, 13 Carteret Street, London, had its counterpart in France: Etude du tunnel sous la Manche, 15 quai Paul Doumer, Courbevoie. Its members were the SETEC, SOGEL, Sir William Halcrow & Partners, Livesey & Henderson, Rendel and Palmer & Tritton.
- 17 Bonnaud, 'Tisser des liens', p. 166.
- 18 Roughly equivalent to the current deficit of British Rail.
- 19 Although the terminals were to be financed by the governments.
- 20 Channel Tunnel Study Group, *Report* (1960).
- 21 N. M. Rothschild & Sons, Baring Brothers & Co., Morgan Grenfell & Co., J. Henry Schroder & Co.
- 22 SUEZ 07.404, Pathé-Journal.
- 23 SUEZ 07.23, Notes d'études.
- 24 Channel Tunnel Working Group, *Proposals for a fixed Channel Link*, Cmnd 2137 (1960).
- 25 SUEZ 07.366, Conférence Georges-Picot à l'Académie de Marine.
- 26 Lord Harcourt of Morgan Grenfell was co-chairman of the Study Group from 1964.

- 27 Then the eleventh largest French industrial concern by turnover. Its engineering consultant was SITUMER.
- 28 *Agreement No. 2*, Cmnd 5486 (1973).
- 29 *Convention no. 1*, Paris (20 October 1972), p. 55.
- 30 In April 1973 Keith Wickenden announced that the Channel tunnel would cost £450 million.
- 31 Michael Bonavia, *The Channel Tunnel Story* (Newton Abbot, 1987), p. 173.
- 32 Assemblée parlementaire du Conseil de l'Europe, *Document no. 3712* (1976), II.a.9.
- 33 In the words of Dr E. Marshall, MP, chairman of the Select Committee on the Channel tunnel Bill. Hansard, vol. 884, 20 January 1975, col. 1025. 'Would it not have been folly to commit two billion pounds of resources to a project when eighty per cent of the beneficiaries would have been holidaymakers with cars?' said Leslie Huckfield, Labour MP. Hansard, vol. 884, 20 January 1975, col. 1031.
- 34 Assemblée parlementaire, *Document no. 3712*, II.b.13.
- 35 *Ibid.*, II.a.5.
- 36 *Ibid.*, II.b.10.
- 37 £2.10 for each £1 invested during phase 1, £1.40 for each £1 invested during phase 2. Hansard, vol. 884, 20 January 1975, col. 1156.
- 38 *Ibid.*, col. 1146.
- 39 Letter to the TUC, 8 January 1974.
- 40 Letter of Jack Jones, 8 January 1974, TUC Papers.
- 41 *Economist*, 2 November 1974.
- 42 House of Commons, Transport Committee, *Minutes of Evidence*, vol. 2, 1980–81.
- 43 *Le Monde*, 21 January 1975.
- 44 Bonavia, *The Channel Tunnel*, p. 117.
- 45 Transport Committee, Channel Link, Second Report, II, *Parl. Papers* (1980–01), 309.
- 46 Assemblée parlementaire, *Document no. 3712*, II.a.3.
- 47 Which enabled subsequent stages to be resumed at the point that had been reached in the previous Parliament. Hansard, vol. 884, 20 January 1975, col. 1155.
- 48 Transport Committee, Channel Link, I, *Parl. Papers* (1980–81), 11 February 1981.
- 49 Hansard, vol. 884, 20 January 1975, col. 1104.
- 50 Assemblée parlementaire, *Document no. 3712*, II.1.
- 51 Channel Tunnel Advisory Group, *The Channel Tunnel and Alternative cross-Channel Services* (1975).
- 52 Hansard, vol. 884, 20 January 1975, col. 1104.
- 53 Channel Tunnel Advisory Group, *The Channel Tunnel*.
- 54 *Ibid.*
- 55 The majority in the past three years had always been five to two. 'The House of Commons should not be easily dismissed when it declares its will with such majorities,' said Mr Ogden. Hansard, vol. 884, 20 January 1975, col. 1100.
- 56 *Ibid.*, col. 1024.
- 57 *Ibid.*, col. 1095.
- 58 Question of Mr Palmer, MP. *Ibid.*, col. 1030.
- 59 *Ibid.*, col. 1121.
- 60 Assemblée parlementaire, *Document no. 3712*, §10.
- 61 Transport Committee, Channel Link, Second Report, II, *Parl. Papers* (1980–81), 734.
- 62 FCO, Exchange of notes ... relating to the abandonment of the Channel Tunnel project, Paris, 24 June 1975.
- 63 Bonavia, *The Channel Tunnel*, p. 131.
- 64 Lord Geddes expressed concern 'about where the rush for economic growth and the craze to travel are leading us and whether, at the end of it all, we shall have a country worth living in'. Royal Society of Arts, *Channel Tunnel: a public discussion* (1973), p. 7.
- 65 Hansard, vol. 985, 1975.
- 66 *Ibid.*, vol. 884, 20 January 1975, col. 1028.
- 67 *Ibid.*, col. 1145.
- 68 *Ibid.*, col. 1146.
- 69 *Ibid.*
- 70 Hansard, vol. 885, 5 February 1975.
- 71 Hansard, vol. 884, 20 January 1975, col. 1156.
- 72 *Ibid.*, col. 1104.

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