

UNITED KINGDOM

Intercity Express Programme



Image: "Class 800 Trains with Train Operating Company (TOC) Liveries" Courtesy of the UK Department for Transport

OVERVIEW

Location

United Kingdom (UK)

Sector

Transport – Rail / Rolling Stock

Procuring Authority

UK Department for Transport

Project Companies

Agility Trains West Ltd and Agility Trains East Ltd (collectively, the Project Company)

Project Company Obligations

Design, Build, Finance and Maintain

Financial Close

July 2012 (Great Western Route, as part 1 of the project) and April 2014 (East Coast Route, as part 2 of the project)

Capital Value

£5.7 billion
(USD \$8.892 billion – 2012 exchange rate)

Contract Duration

27.5 years

Key Events

Changes required due to delays in electrification of the Great Western Main Line, refinancing

SUMMARY

With large numbers of intercity trains on the UK rail network approaching the end of their service life, and additional capacity required to serve increased passenger numbers, the Procuring Authority, the UK Department for Transport, awarded two contracts to supply, finance and maintain a fleet of new trains. Given its scale, the project was split into two parts; one for the Great Western Main Line and one for the East Coast Main Line, with each of the Project Companies (namely Agility Trains West Ltd and Agility Trains East Ltd) being responsible for the trains for one of the main lines. As the two arrangements take the same form, this case study will largely refer to one PPP contract and one Project Company. The UK private train operating companies (the Train Operators) will pay the Project Company to use the trains, subject to performance and availability standards being met.

The electrification of the Great Western Main Line, originally due to be completed by 2015, was delayed, and the Procuring Authority took the decision to increase the number of bi-mode trains (electric plus diesel capability, rather than solely electric) for that particular line and to reschedule delivery.

At the time of writing this case study, almost half of the trains required to operate on the Great Western Main Line had entered into service operation.

SUMMARY LESSONS LEARNED

- Changing external advisors at key moments may create additional risks to a project.
- A strong relationship between the Procuring Authority, the Project Company and other key stakeholders can help to mitigate the potential impacts of new issues.
- Resourcing is required to manage all relevant stakeholders, particularly where there are complex interfaces between multiple parties.
- Risks related to third parties with which the Project Company does not have a direct agreement will typically be retained by the Procuring Authority, which means it will have to manage those third parties.
- Where Procuring Authorities can share in a potential refinancing gain with the Project Company, they should be mindful of potential opportunities in the financial markets as they may lead to substantial benefits for the Procuring Authority.
- Variation provisions in PPP contracts should be workable and not overly complex. There are also times when the Procuring Authority should adopt a flexible approach to facilitate delivery of the broader benefits of the project.

PROJECT INCEPTION

Goals and Objectives of the Partnership

The Intercity Express Programme project was initiated in 2005, with the Procuring Authority's business case showing that, at that point in time, trains were only just providing sufficient capacity to meet demand, and that existing trains were approaching the end of their expected service life. Major investment was required to ensure that high capacity, reliable services would be able to be provided over the medium- to long-term. The Procuring Authority ran a procurement process for a new fleet of trains for the two regions, and given its scale, the project was split into two parts, both of which reached commercial close in July 2012. The two lines are:

1. The Great Western Main Line, covering the region to the west of London. These works included 57 trains, the development of two depots and the refurbishment of one depot. It reached financial close in July 2012.
2. The East Coast Main Line, covering the intercity routes from London along the east coast of the UK. These works included 65 trains, two refurbished depots and one new-build depot, and it reached financial close in April 2014.

The decision to pursue a public-private partnership (PPP) model to procure the required rolling stock was taken due to the size of the undertaking and a desire to drive

value for money for the public sector. The common procurement route for trains in the UK is for private train leasing companies (referred to in the UK as Rolling Stock Operators, or ROSCOs) to procure and then lease new rolling stock to the Train Operators. However, with 122 new trains to be brought into service (consisting of 866 individual carriages) as part of this project, with a total capital value close to £5.7 billion, this was judged to be too large to follow this common route. The size of the deal also influenced the rationale for delaying financial close of the East Coast trains, as there may not have been sufficient capacity in the financial markets to complete both parts of the project simultaneously.

Some of the challenges of the project were anticipated before commercial close. The PPP contract included the concept of 'contemplated variations', which allowed the Procuring Authority to request variations should certain circumstances arise. These challenges included the following:

- The government was required to play a key role in managing the interests of various stakeholders. The UK rail network is operated by private Train Operators who bid to run a section of the network (a "franchise") for a period of time, generally seven years. The two main lines of the project (Great Western and East Coast) are run by separate franchises and were operated by different Train Operators during the design and manufacturing phase. The Procuring Authority needed to play a substantial role in managing these stakeholders in the development of detailed specifications during the design phase to agree a uniform base specification.
- The operation of the electric trains on the Great Western Main Line was dependent on the electrification of the line itself. When the PPP contract was being finalised, the plan was to electrify the line from London to Cardiff in Wales, which is approximately 145 miles (232km). Electrification of the line is the responsibility of Network Rail, who is the owner and manager of UK rail infrastructure. There was a risk that this work may be delayed, and the materialisation of this risk is described below under the heading "Key Events".

The contractual arrangement for the project is based on two agreements. The first agreement is the Master Availability and Reliability Agreement (referred to here as the PPP contract) between the Procuring Authority and the Project Company. It includes the guarantee that the Procuring Authority will require the Train Operators to enter into a contract with the Project Company and provide availability payments for the rolling stock throughout the life of the contract. The second agreement is the Train Availability and Reliability Agreement (the Interface Agreement) directly between the Train Operators and

the Project Company. The Interface Agreement defines the requirements for maintaining and making the trains available to the Train Operators for use on the network, as well as the corresponding availability payment obligations due to the Project Company. Delivery and maintenance of the rolling stock is passed down under a supply and maintenance contract from the Project Company to Hitachi Rail Europe, who is also the majority equity investor in the Project Company.

Project Company Organisation

The contractual arrangements described above (the PPP contract, the Interface Agreement and the supply and maintenance contract) are on the same terms for both the Agility Trains West Ltd and Agility Trains East Ltd Project Companies, which were both initially owned by Hitachi (70%) and John Laing (30%) as equity investors.

The equity investors made the decision to establish a single management team working across both projects due to the commonality of contractual structure, ownership, and train design, delivery and operation. This management team was primarily resourced from long-term secondees from the equity investors. This structure proved extremely valuable in providing an effective single point of contact with the Procuring Authority team, who were also managing both contracts. Consequently, the Procuring Authority was constantly aware of the developing circumstances of the projects, particularly around delayed electrification, and could facilitate the negotiation and agreement of the variations ultimately required to address those issues.

This approach also meant that the Project Company, its equity investors and their financial advisors could develop a strong team to work with the lenders to raise the finance for both projects (and the additional loan agreements required for the subsequent variations). Hitachi's relationship with Japanese banks was also important for this.

The Economic and Political Environment during Inception

The discussion on new intercity rolling stock began in the mid-2000s, with the project information released to the market in 2007. The preferred bidder, the Agility Trains consortium led by Hitachi, was selected in 2009, but the project was subsequently put on hold. This was due to the reduced capacity of the financial markets to provide finance as a result of the Global Financial Crisis, as well as the decision made in 2009 to electrify the Great Western Main Line, changing the requirements for the project. There was also another significant rolling stock procurement programme running at a similar time (Thameslink, where the preferred bidder was chosen in June 2011), as well as the major M25 highway project, which together had the potential to stretch the resources of the Procuring Authority and the financial markets.

In March 2010, a value for money review was carried out on the project, and the government also conducted a comprehensive spending review on all government expenditure. Additionally, there was a change in government in the UK in 2010. It was finally decided in 2011 to continue with the project, with the Agility Trains consortium remaining as preferred bidder.

MANAGEMENT OF THE PPP CONTRACT

Construction Phase

The Procuring Authority played an important role during the design and manufacturing phase of the project. At financial close, the Procuring Authority had developed a technical specification for the trains describing the output requirements, however the design specifications from the tender stage were limited. Targets had to be clarified, the specification had to be finalised into detailed design requirements, and these had to be reviewed. Input into all these stages was needed from both of the affected Train Operators, who sometimes had differing views. The Great Western Line has substantial demand from commuters who travel regularly into London, while the East Coast Line is used more for discretionary travel, and hence the specific needs (in terms of design and technical specifications) of the two lines can differ. During the design and manufacturing process, the Procuring Authority relied on their technical advisors, and considered it important to keep the same advisors throughout the entire process. In addition to providing the rolling stock, the Project Company was also responsible for constructing and refurbishing train depots.

The electrification of the Great Western Main Line was not part of the project. However, those works needed to be completed in order for the new electric trains to be tested and then used. When Network Rail did not deliver on time, the programme for manufacturing the rolling stock had to be altered to increase the number of bi-mode trains, and the design of the depots had to be updated to cater for the bi-mode trains' diesel engines. This is described in more detail under the heading "Key Events" below.

Operations Phase

At the time of writing this case study, the operation of trains on the Great Western Line had just begun. The data collected by the Procuring Authority on the initial performance of the line will be used to evaluate the original business case, in terms of the benefits of the new rolling stock and the maintenance requirements.

Payment Mechanisms

The project was set up such that the Project Company does not receive any revenue until trains enter service, at which point it receives availability payments, which are paid

by the Train Operators to the Project Company for each train in service and are subject to payment deductions. There are no additional payments from the Procuring Authority, though the availability payments payable by the Train Operators are guaranteed by the Procuring Authority. This arrangement incentivises the Project Company to bring the trains into service as soon as possible, as it was not receiving any revenue during the design and manufacturing stage.

The Train Operator pays the set availability payments to the Project Company on the basis of a specified number of trains being made available to the Train Operator at the start of each operational day. The Train Operator is responsible for returning the train to the Project Company at the end of the day. Under the performance regime, deductions can be levied by the Train Operator if trains are not made available for passenger service at the start of the operational day, or if train faults impact service provision during the day.

Further deductions can be imposed under the KPI regime for aspects relating to the condition of the trains themselves, such as cleanliness. A form of score board for 84 agreed KPIs is set out in the contract to monitor the KPI regime. The KPIs are divided into two groups; presentation of the physical condition of the train (e.g. scratches) and cleanliness. The Project Company populates these scoreboards every time the train is handed over to the Train Operator and the scoreboards are reviewed again during regular performance review meetings.

The set availability payment is paid in advance, with deductions applied retrospectively. This performance regime is a significant change for the Train Operators, who generally lease their other rolling stock and are responsible themselves for their maintenance. The Project Company is aware that this process will need to include a transition period for the Train Operators, and it has been working with them in advance of the trains coming into operation to avoid confusion and disagreement at a later stage. The Procuring Authority is also paying particular attention to the performance regime during the initial operational period.

Change Management

There have been a number of variations during the design and manufacturing of the rolling stock, primarily due to the delays and changes to the programme for the electrification of the Great Western Main Line. The original intention had been to electrify the line to Cardiff. However, this was then changed to extend electrification to Swansea, a decision which was later reversed. Each of these changes implied an alteration to the type of train being delivered, as well as changes to the depots, which are also part of the project.

The largest, most time-consuming variations to the project were fundamental and all essential if the project was to respond to the delays in the provision of the electrified infrastructure. The subsequent commercial negotiations were complex and time-consuming. It should also be recognised that the complexity of the contracts, their variations, and the need to secure the lenders' approval inevitably meant that external advisors needed to be heavily involved. Nevertheless, both parties worked collaboratively to overcome these challenges. The Procuring Authority recognised that the primary objective had to be the achievement of fair, and properly established, negotiated and agreed pricing, as well as other operational and contractual amendments.

ROLE OF GOVERNMENT

The role of the Procuring Authority during the design and manufacturing phase was substantial and clear. During the operations phase, this role will be significantly reduced, as the payment and performance mechanisms are predominantly between the Project Company and the Train Operators. In the interim period, where trains are starting to be introduced into the network, the Procuring Authority's role is less clear. The Procuring Authority is managing this to ensure it is not exposed to additional risk during this period.

Refinancing

A refinancing occurred on the project in 2014. The East Coast phase of the project reached financial close in 2014, and the financing terms were better than those offered for the Great Western financing in 2012. The opportunity for refinancing was identified by Her Majesty's Treasury, with the Procuring Authority issuing a Refinancing Notice to request that the Project Company take advantage of the financing opportunity available. The final arrangement of the refinancing was an "all lender agreement repricing", where the lenders who had originally signed up agreed to new terms. The PPP contract sets out a schedule for sharing the refinancing gain between the parties. The refinancing was completed in a relatively short period of time, with 80% of the gains payable to the Procuring Authority resulting in approximately £60 million in savings.

RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

Team Set-Up and Staffing

The Procuring Authority team on this project is relatively small, and external advisors are used where specific technical, legal and financial expertise is required. Having most of the Procuring Authority staff continue from the tender negotiations into the implementation of the project was beneficial for retention of knowledge.

There was a change in the legal advisors used by the Procuring Authority, which created inefficiencies, as documents and knowledge had to be transferred. This may have been avoided by continuing with the same legal advisors or managing the transition between legal advisors more effectively.

Training and Development

As this was the first PPP of this nature that the Procuring Authority had completed in recent times, the Procuring Authority had limited experience in managing this type of contract. Furthermore, the most recent introduction of a new train fleet prior to this project was in the early 2000s. As a result, there was a lack of expertise early on, and so this had to be developed and brought in. The Procuring Authority has since focussed on project management and assurance, with gradual improvements in commercial expertise, procurement and contract management.

Communications

The Procuring Authority and the Project Company are both primarily based in London, which has enabled a collaborative relationship through face to face interactions. This was done consciously by both the Procuring Authority and the Project Company, helped by the fact that their concerns are often aligned. This collaboration and alignment of concerns helps to avoid an adversarial relationship between the two parties. The parties have not, however, co-located, which the Procuring Authority sees as positive due to the necessary degree of separation it provides.

Information Management

The Procuring Authority has not prescribed an information and data management system. The Project Company submits reports via email in advance of monthly review meetings. There was a shared data management system used during the design phase, as well as a shared risk register, however this was done for practical reasons rather than as a strict requirement. This has allowed the parties to adapt their working styles to the circumstances.

KEY EVENTS

Dealing with the Delay to Electrification

The rolling stock for the Great Western Main Line was originally due to be split between 29x five-car bi-modes, 15x eight-car bi-modes and 13x eight-car electric trains. Bi-mode trains are electric trains that are equipped with underfloor diesel generators to provide propulsion where lines are not electrified. There had never been plans to electrify all the lines on which intercity trains operated on the Great Western network. Having part of the fleet bi-mode allowed continued operation onto the non-electrified routes and also a degree

of operational flexibility, in particular to use non-electrified diversionary routes during engineering work or disruption. There were contractual commitments to provide the electrified track for both testing as well as for operations.

In early 2015, it became apparent to both the Procuring Authority and Project Company that the planned electrification of the Great Western Network, necessary to support both pre-commissioning and testing activities as well as the eventual operational deployment of the primarily electric IEP fleet, was not going to be delivered according to Network Rail's original timetable.

To mitigate this forecasted delay and its associated implications, the Project Company and Procuring Authority worked to develop a number of contractual variations that: (i) converted the electric-only IEP trains into bi-mode IEP trains able to run without overhead wires, (ii) made the necessary modifications to the depots to accommodate and service diesel trains and (iii) addressed the commercial consequences of the delay in the provision of the necessary testing infrastructure and the resultant delay to the original entry into service date.

The Procuring Authority and Project Company were able to deal with this challenge successfully due to the strength of the relationship between the two parties, and also the commitment of the Project Company, together with its manufacturing contractor, Hitachi, to deliver the rolling stock with as little delay as possible. A commitment to finding a practical way to overcome challenges was seen as vital by all parties and, again, working closely with Hitachi, a revised delivery schedule was agreed, and the costs of delay were mitigated. There have been no formal disputes between the parties.

LESSONS LEARNED

Changing external advisors at key moments may create additional risks to a project.

The project has highlighted the importance of keeping the same key staff and advisors for a long period of time wherever possible, especially on long-term and complex contracts such as PPPs. A Procuring Authority will almost always rely on external advisors on technical, legal and financial issues in complex transactions, and changing the advisors part way through the project, particularly at key phases, creates additional risks and should be avoided where possible. In this example, the Procuring Authority was required by central government policies to retender advisory contracts, which resulted in a change of some of its advisors.

A strong relationship between the Procuring Authority, the Project Company and other key stakeholders can help to mitigate the potential impacts of new issues.

The strength of the relationship between the Procuring Authority, the Project Company and Hitachi allowed the Procuring Authority to deal with challenges caused by external factors, such as delays in the electrification of the rail line. In this case, a collaborative approach combined with a payment mechanism which incentivised the private partner to deliver the trains as quickly as possible allowed the track electrification issues to be addressed with minimal delay to the project itself. This was also helped by the drive and commitment of the Procuring Authority team's leadership, which, in this case, was vital to overcoming challenges.

Resourcing is required to manage all relevant stakeholders, particularly where there are complex interfaces between multiple parties.

The effort required to manage a range of stakeholders should not be underestimated, particularly in a multi-faceted environment such as the UK rail industry. In this case, the process of managing two Train Operators during the design and manufacturing phase was more challenging than anticipated, as it required additional effort and resources to balance the desires of two different operators which were not always aligned.

Risks related to third parties with which the Project Company does not have a direct agreement will typically be retained by the Procuring Authority, which means it will have to manage those third parties.

The electrification of the Great Western Main Line and the works required under the project were both independent and interdependent projects, and at the time of signing the PPP contract, Network Rail was an independent company with which the Project Company did not have a relevant, direct agreement. The Project Company and the Procuring Authority agreed that the Procuring Authority should retain the risk for electrification delays caused by Network Rail. Network Rail was reclassified as an arm's length public body in 2014, which means that it retains operational independence but the board of directors reports to the UK Secretary of State for the Department for Transport. While this change now gives the Department for Transport some additional influence over Network Rail's performance, management of Network Rail's performance to deliver on time remained a risk for the Procuring Authority. The delays and costs caused by the delay in electrification demonstrate the impact third parties can have on the overall programme of works. The complexities and unique features of the UK rail industry led to the eventual materialisation of this risk.

Where Procuring Authorities can share in a potential refinancing gain with the Project Company, they should be mindful of potential opportunities in the financial markets as they may lead to substantial benefits for the Procuring Authority.

Refinancing can sometimes be used to extract value and generate savings from a project, and it is common in advanced PPP markets for PPP contracts to allow the Procuring Authority to request refinancing and share in the Project Company's savings. In order to do so, the Procuring Authority must have the necessary expertise to recognise that an opportunity exists in the financial markets, and to carry out the process quickly enough to take advantage of market conditions. Refinancing the project resulted in substantial benefit for the Procuring Authority.

Variation provisions in the PPP contracts should be workable and not overly complex. There are also times where the Procuring Authority should adopt a flexible approach to facilitate delivery of the broader benefits of the project.

The Intercity Express Programme included a concept of "contemplated variations", which defines a process for one party to request a variation should certain circumstances arise. The concept was designed to simplify the process in agreeing changes where a certain level of agreement of likely changes was understood between the parties at the time of signing the PPP contract. In this case, the circumstances were more complex than anticipated, with electrification delays being much greater than what would have reasonably been expected. This meant the "contemplated variations" clauses weren't completely helpful, and the Procuring Authority decided to adopt a flexible approach.