

## ARLANDA RAIL LINK, STOCKHOLM, SWEDEN

### OVERVIEW

**LOCATION:** STOCKHOLM, SWEDEN  
**SCOPE:** INTER-REGIONAL  
**TRANSPORT MODE:** RAIL  
**PRINCIPAL CONSTRUCTION:** AT GRADE  
**NEW LINK:** YES

### PRINCIPAL OBJECTIVES

**STRATEGIC TRANSPORT LINK**  
**REDUCED EMISSIONS**  
**PRIVATE SECTOR INVOLVEMENT**  
**LOCAL TRANSPORT LINK**  
**REGIONAL TRANSPORT LINK**

### PRINCIPAL STAKEHOLDERS

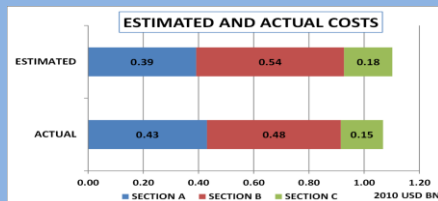
**CLIENT:** ARLANDA RIGHTS CO (NRA/CAA)  
**A-BANAN PROJEKT AB**  
**CONCESSIONAIRE:** ARLANDA LINK  
**CONSORTIUM (LATER MACQUARIE)**  
**OPERATOR:** A TRAIN AB

### PLANNING AND IMPLEMENTATION

**PLANNING START DATE:** 01/1988  
**CONSTRUCTION START DATE:** 11/1995  
**OPERATION START DATE:** 11/1999  
**MONTHS IN PLANNING:** 94  
**MONTHS IN CONSTRUCTION:** 48  
**PROJECT COMPLETED:** 13 MONTHS  
**AHEAD OF SCHEDULE**

### COSTS (IN 2010 USD)

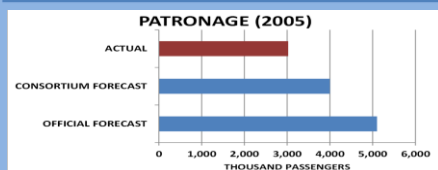
**PREDICTED COST:** 1.10BN  
**ACTUAL COST:** 1.07BN  
**PROJECT COMPLETED:**  
**3% UNDER BUDGET**  
**FUNDING:** 55% PUBLIC : 45% PRIVATE



### INFRASTRUCTURE QUANTITIES:

**LENGTH:** 20KM  
**LENGTH IN TUNNEL:** 7KM  
**NUMBER OF STATIONS:** THREE  
**COST PER KM (2010 USD):** 0.05BN

### PATRONAGE



### INTRODUCTION

A two-track railway from Stockholm Central station to Arlanda Airport, the Arlanda Rail Link opened in 1999, with the aim of allowing expansion of the airport whilst reducing emissions.

The Link was the first public-private partnership project in Sweden; a concessionaire operates the Arlanda Express service to Stockholm. The project also includes works to Stockholm Central Station, connections to the existing rail network between Stockholm and Uppsala, and three new stations at the Airport (one for existing regional rail services and two for the Arlanda Express).

### BACKGROUND

The main driving forces behind the project were the increased demand for flights from Arlanda Airport during the 1980s and early 1990s, coupled with the aim of relieving the impact on the road network in response to environmental concerns. At the same time, a gradual process of opening up the rail network to private sector competition was given new impetus by an economic crisis and the election, early in 1991, of a conservative-liberal government.

Permission for a third runway at the Airport was granted in 1991 but only on the basis of a cap on emissions (including from ground transport) and the provision of a rail link to Stockholm. The initial planning stages for the Link, including consultation with the local authority concerned, were carried out by the national rail administration (NRA). However, it was seen as suitable pilot project to encourage private sector involvement in infrastructure provision, and a group headed by senior industrialists was set up to manage the procurement process. This group later became the state-owned client company A-Banan Projekt AB.

The project appraisal in 1990 concluded that the project would only be viable with state subsidies, and the government later decided to fund two of the three sections (Section A: upgrading the line haul from Stockholm to Rosersberg from dual-track to four-track; and Section C, the North Bend: providing a connection from Arlanda back to the main line at Odensala) as public sector projects.

Private sector bids were invited for section B: building a branch line from Rosersberg to the Airport and three underground stations, and operating an express service between Stockholm and the Airport.

**TIMELINE**

- CONTEXT: 1962: ALL SCHEDULED FLIGHTS MOVED FROM BROMMA TO ARLANDA**
- CONCEPTION: 1980s (EARLY): CONCEPT OF RAIL LINK TO AIRPORT DISCUSSED**
- CONTEXT: 1988: SWEDISH STATE RAILWAYS SEPARATED**
- CONCEPTION: 1988: GOVERNMENT ASKS NRA TO STUDY ALTERNATIVES TO PUBLIC FUNDING, TO START CONSTRUCTION IN 1991**
- INCEPTION: 1989: NRA PRESENTS PROPOSAL FOR SCHEME**
- CONTEXT: 1990-94: ECONOMIC CRISIS IN SWEDEN**
- INCEPTION: 1990: PROJECT APPRAISAL IDENTIFIES NEED FOR PUBLIC FUNDING**
- INCEPTION: 1991: GOVERNMENT ESTABLISHES DELEGATION TO MANAGE PROCUREMENT, APPROVES THIRD RUNWAY AT ARLANDA CONDITIONAL ON RAIL LINK**
- INCEPTION: 1991/92: GOVERNMENT ALLOCATES PUBLIC FUNDING FOR LINE HAUL UPGRADE**
- CONTEXT: 1991: GENERAL ELECTION, CHANGE OF GOVERNMENT**
- CONCEPTION: 1992: PROJECT SPLIT INTO THREE SECTIONS: PRIVATE FUNDING ONLY VIABLE FOR SECTION B**
- INCEPTION: 1993: APPROVAL BY GOVERNMENT. INVITATIONS TO TENDER**
- INCEPTION: 1994: GOVERNMENT SPECIFIES RIGHTS AND DUTIES OF CONTRACT. A-BANAN PROJEKT AB TAKES OVER FROM DELEGATION**
- INCEPTION: 1994: TWO TENDERS RECEIVED, NEITHER MEETS TECHNICAL REQUIREMENTS, REVISED BIDS RECEIVED**
- INCEPTION: 1994: CONCESSION AWARDED TO ARLANDA LINK CONSORTIUM**
- CONSTRUCTION: 1995 (NOV): CONSTRUCTION STARTS**
- DELIVERY: 1999: CONSTRUCTION COMPLETE, LINK READY TO OPERATE**
- DELIVERY: 2003: NATIONAL AUDIT OFFICE EVALUATES PROJECT**
- DELIVERY: 2004: A TRAIN AB BOUGHT BY MACQUARIE GROUP**

**CHARACTERISTICS**

The concession was awarded to the Arlanda Link Consortium (four construction companies – three Swedish and one British – and the rolling stock supplier GEC Alsthom), under a Build Operate Transfer agreement. The operating company A-Train AB was set up as a subsidiary of ALC. The physical infrastructure is owned by A-Banan Projekt AB but leased on a 45-year concession to A-Train AB, which is obliged to allow access to other rail companies for a ‘non-discriminatory’ fee.

The cost was estimated at SEK 5.2bn in 1990, and at SEK 5.35bn (excluding rolling stock) in 1992 (USD 1.10bn at 2010 prices<sup>1</sup>). The final cost in 1999 (excluding rolling stock) was SEK 5.95bn (USD 1.04bn at 2010 prices). This included a significant overrun on Section A, which has been linked to a lack of clarity over whether connection to the main line was included in the original estimates. Changes in the project scope, in particular the number and type of stations to be built at the airport, and the inclusion of upgrading works benefiting other routes, also complicate the issue of costs.

**TIMELINE ISSUES**

Construction was originally envisaged by the government as starting in 1991 but the procurement process was complex and the scope for private funding was revised significantly before approval in 1993, when a completion date of December 2000 was set. The Link opened a year earlier than required.

**FUNDING**

ALC funded the SEK 2.7bn cost of Section B through bank loans of SEK 1.1bn, a stipulated loan from the government of SEK 1bn, equity of SEK 0.4bn and loans from its partners of SEK 0.2bn. The total private sector funding was thus SEK 1.7bn, or 45% of the total.

The stipulated loan entitles the government to receive a share of the company’s returns (rather than a fixed interest rate) but patronage has been lower than anticipated, due to an over-estimation of the growth in flight passengers and high train fares (revenue forecasts had assumed fares would be the same as for airport buses).

ALC was believed to have made a loss of SEK 200m when A-Train AB was sold to the Macquarie Group in 2004. All shares in A-Train and the debt of SEK 400m were included in the deal.

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<sup>1</sup> Costs have been converted to USD at 2010 prices, using historic inflation rates and current exchange rates, to allow comparison between projects.