

PROJECT COMPLETION REPORT

Project Title : **Joint Venture(s) for the Caucasian Railways**

Project Number : TNREG 939401

Country : Armenia, Azerbaijan, Georgia

	Local operator		EC Consultant	
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Date of report : 15/09/97

Reporting period : 03/97 - 08/97

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1 Project synopsis

Project Title	:	Joint Venture(s) for the Caucasian Railways
Project Number	:	96.5066.00
Countries	:	Armenia, Azerbaijan and Georgia

Project objective(s):

- determination of those areas for which there is the possibility of cooperation between the railways of Armenia, Azerbaijan and Georgia, as well as between the railways and the ports of these countries on the Caspian Sea and the Black Sea and railway ferry lines within the scope of joint ventures;
- establishment of the legal, organisational, financial, management and marketing conditions for such joint ventures;
- preparation of joint ventures with participation of Western capital, preferably in the infrastructure area and the transport service field.

Planned outputs:

- forecast of the development of freight and passenger traffic;
- assessment of the technical condition of the three railways, focusing on their main network, in particular on those lines serving for more than 90 per cent of the total transport performance;
- economic and financial assessment of the railways; determination of the priorities, and sequence of necessary maintenance and investment measures;
- investigations for the formation of joint ventures in the infrastructure area as well as the transport services;
- business plans for the proposed joint ventures;
- railway staff training in modern management and marketing methods, as well as in technical procedures and standards;
- establishment of a "logistic express Poti-Yerevan".

Project activities:

- **WP 1000 Railway infrastructure authority**
 - WP 1100 (1110 - 1170) Present condition of the network
 - WP 1200 (1210 - 1240) Organisational, legal and financing conditions
 - WP 1300 (1310 - 1340) Establishment of international cooperation

- **WP 2000 Business strategy infrastructure**
 - WP 2100 (2110 - 2130) Traffic forecast
 - WP 2200 (2210 - 2260) Investment plan for the railways infrastructure
 - WP 2300 (2310 - 2340) Management

- **WP 3000 Trans-Caucasian railway service centre**
 - WP 3100 (3110 - 3150) Present conditions of the TCR and deficiencies analysis
 - WP 3200 (3210 - 3260) Objectives and strategies
 - WP 3300 (3310 - 3350) Foundation of a service company
 - WP 3400 (3410 - 3450) Business plans

- **WP 4000 Port and ferry service**
 - WP 4100 (4110 - 4130) Present conditions in ports
 - WP 4200 (4210 - 4230) Technical / operational requirements for ferry connections
 - WP 4300 (4310 - 4340) Ferry operation company

- additional activities in order to establish logistic express Poti - Yerevan

Project Starting Date : 23 July 1996

Project Duration : 10 months

2 Summary of project progress since the start of the project

In accordance with the main points of the project detailed in the ToR and the revisions contained in the Inception Report, the following complexes have been dealt with and results have been achieved within the project processing:

- Analysis of the technical conditions of the three Caucasian railways and their interfaces with other modes of transport as well as the quantification of the necessary investment and repair requirements; assessment of the necessary measures according to their priorities and sequence
- Analysis of the organisational and legal / administrative regulations for the technical and technological conditions of the railways and deduction of conclusions for necessary measures guaranteeing a coordinated further development
- Market analysis and traffic forecast of freight and passenger transport with special attention given to the development of competitive transport corridors and transport modes
- Analysis of the financial situation of the three railways concerned and development of different scenarios of the economical and financial development under special consideration of measures orientated to a consolidation of the financial results of the railways
- Evaluation of different options for forming joint ventures in the infrastructure and railway operation field
- Identification of three projects in the infrastructure area of the railways suitable for forming joint ventures and assessment of the necessary legal, administrative, organisational and economic basis for JV in the fields
 - production of prestressed concrete sleepers
 - repair / rehabilitation of electro-locomotives
 - improvement of the communication network
- Investigation of possibilities and development of proposals for the establishment of operating company(ies) for the "Trans-Caucasian Logistic Express"
- Analysis of requirements regarding the development of ports for combined / multimodal transport
- Training of 10 representatives of each railway in modern marketing / sales techniques, technical and technological basis of railway management during a Management Study Tour to Germany and a Managerial GRID®-Seminar

3 Project progress in final project period

Work during the period of report concentrated on the following complexes:

- Revision and completion of the Traffic Forecast
- Completion of investigations on the reconstruction requirements of the infrastructure
- Completion of the financial status and the forecast of the earnings and cost development of the three railway administrations investigated
- Determination of a ranking and sequence for necessary investments
- Investigations in preparation of basis for deciding on the establishment of Joint Ventures in the infrastructure and railway operation areas
- Realisation of training measures

The main achieved results and conclusions are as follows:

Traffic forecast

On the basis of comments given during the processing of the project a deepened investigation was carried out concerning the development of some branches of the economy, especially the oil industry, in the region and the development of freight traffic flows on the main railway lines and for combined transports.

The investigations showed that one may generally assume a further increase in the freight volume for both of the scenarios studied, however, without achieving anything like the transport volumes of the 80s. With regard to the development of the structure of the type of goods, the following has to be said.

There will only be insignificant changes and differences in the structure of the type of goods for the forecast development of the freight traffic volume in the transport main corridors and between the optimistic and the pessimistic scenario.

Petrochemical products will continue to determine transport in the westbound traffic. Their share will decrease to slightly below 90 per cent by the year 2015. On the other hand, the share of other processed products will increase a little.

The share of cereals will drop considerably in the eastbound traffic, due to the decreasing food aid for the countries of the region. The share of investment goods, consumer goods and other processed goods will grow.

The investigations regarding the development of the passenger transport were finalised.

The assessment of the passenger traffic development shows, that there is only a moderate increase compared with the development of freight traffic. Because of its minor influence on the overall development of the railway systems as a whole the passenger traffic does not play a significant role in the Caucasian railways.

Financial aspects

There were carried out / finalised:

- Financial analysis of the three railways regarding their
 - assets and liabilities
 - cost and revenues
 - investment expenditures
 - financial ratios
- Financial forecast using four different scenarios:
 - Scenario 1: The existing price level remains unchanged until 2015;
 - Scenario 2: The Railways change their tariffs in such a way that for half of its performance, prices are raised by 50 % by 2000 and then, progressively the prices of this half are further increased to reach double the present level by 2010;
 - Scenario 3: Tariffs are subject to strong increases so that on average for all transports, they are about three times as high as they are now.
 - Scenario 2A: The same assumptions as in scenario 2, but taking into consideration a „reduced investment programme“ focused on the development of the most profitable services and railway lines

The main conclusions which can be drawn from the calculations performed are:

- The overall profitability is clearly negative if the present price level is kept unchanged, and the break-even point is far away;
- The railway system as a whole is able to become fairly profitable if reasonable price increases are introduced, along with an improved marketing policy and an improved service;
- A reduction of the investment programme by eliminating the components which are not indispensable for keeping the essential assets in safe working condition is necessary.

Reconstruction requirements of infrastructure

The investigations on the necessary rehabilitation of infrastructure concentrate on the following complexes:

- repair of tracks, switches and bridges
- repair of signalling and telecommunications installations
- power supply
- stations; terminals of combined transport
- rolling stock and workshops

Based on a detailed investigation of the present condition the rehabilitation measures needed for a proper and secure railway operation were determined.

The definition of urgency and sequence of the needed investments was carried out using so called „priorities“:

- 1st priority - urgent needed repair work in the next 2-3 years
- 2nd priority - medium - term measures (up to the year 2005)
- 3rd priority - long - term measures (up to the year 2015)

Urgent needed repair work in the near future for infrastructure amounts to some 492 million US-\$, medium - term measures to 283 million and long - term measures to 494 million US-\$ plus 1435 million US-\$ for rolling stock rehabilitation. That means, that the overall needed investment for the years up to 2015 amounts to

2,711 million US-\$.

Establishment of Joint Ventures

During the reporting period special emphasis was given to all questions connected with the assessment of the preconditions and the analysis of conditions for forming Joint Ventures.

Based on a special rating methodology different options and possibilities for forming Joint Ventures were checked regarding their suitability for deepened investigations:

- 7 possibilities in the infrastructure field
- 6 possibilities in the field of rolling stock / workshops
- 8 possibilities in freight / passenger transport.

The following four options were selected for further detailed investigations:

- production of prestressed concrete sleepers
- maintenance/ overhaul / reconstruction of electric locomotives

- improvement of the railways' communication system
- creation of operating company(ies) for the „Trans--Caucasian-Logistic-Express“

For each of these options

- the management and ownership strategy,
- the organisational structure
- the operating of the JV
- the financial basis and development
- the possible financing sources and
- the human resources

were checked and corresponding conclusions and recommendations were developed.

Training measures

A management Study Tour to Germany was organised for 10 representatives each of the Armenian, Azerbaijan and Georgian Railways, in the period between 16 and 30 April, 1997. Based on the findings of the previous project work in such essential areas as the imparting of experience and the transfer of know-how, the following complexes constituted the focus of the study tour:

- organisational and structural reform of „Deutsche Bahn AG“ (DB AG);
- market position of the railways on a liberalised transport market;
- legal and social problems of the railways;
- cooperation between European railways;
- market work / cooperation with customers / establishment of Joint Ventures;
- organisation and implementation of maintenance and construction of tracks, wagons and engines;
- foundation of affiliated companies / outsourcing;
- organisation and technical solutions for multimodal transport.

The findings of the study tour were to be again discussed and deepened on occasion of a training course for participants from all three countries, organised in Tabakhmela (Georgia) in the period between 1 and 6 June. This course was based on the internationally acknowledged managerial and sales GRID® technique.

This training course was to impart to its participants the necessary experience enabling them to improve their abilities and knowledge in the fields

- management and organisation;
- team work and management of teams;
- settling of conflicts;
- sociological and communication problems.

PROJECT PROGRESS REPORT

Project title : Joint Venture(s) for the Caucasian Railways	Project number : TNREG 939401	Country : Armenia / Azerbaijan / Georgia	Page :1
Planning period : 03/97 - 08/97	Prepared on : 15/09/97	EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin	
Project objectives : Promoting the establishment of cooperation between the Caucasian railways and the creation of joint ventures for infrastructure rehabilitation and train operation services			

No	ACTIVITIES IMPLEMENTED	TIME FRAME 1997 Months							INPUTS							
		3	4	5	6	7	8	9	PERSONNEL EC CONSULTANT		COUNTERPART		EQUIPMENT AND MATERIAL		OTHER flights / DSA	
									Planned ¹	Utilised ²	Planned ¹	Utilised ²	Planned	Utilised	Planned	Utilised
001/2	Project management/document.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X	21,0 MM	21,0 MM	1,5 MM	1,5 MM			15 / 145	11 / 145
1100	Present condition of network	XXXX	XX	XXXX	XX				2,1 MM	1,5 MM	1,5 MM	1,5 MM			2 / 41	2 / 36
1200	Organ., legal, financ. cond.	XXX		XXXX					1,8 MM	2,2 MM	2,0 MM	1,5 MM			2 / 44	1 / 42
1300	Establishm. of intern. coop.	XX	XX	XX					1,3 MM	1,5 MM	0,3 MM	0,8 MM			2 / 37	1 / 30
2200	Investment plan for infrastr.			XXXX	XX	XX			3,0 MM	2,5 MM	1,0 MM	1,5 MM			3 / 60	1 / 54
2300	Management		XXXX		XX				3,8 MM	4,3 MM	1,5 MM	1,0 MM			20 / 255 ¹	18 / 272
3100	Present condition of TCR	XX	XX						0,8 MM	0,8 MM	0,9 MM	0,9 MM			1 / 15	0 / 17
3200	Objectives and strategy			XXXX	XX	XX			1,0 MM	0,7 MM	0,6 MM	0,5 MM			1 / 27	0 / 21
3300	Foundation of service comp.		XX	XX	XXXX	XXXX	XX		5,4 MM	5,5 MM	2,4 MM	2,0 MM	teaching materials	real. dur. GRID-seminar	18 / 285 ¹	16 / 318
3400	Business plan				XXXX	XXXX	XX		2,6 MM	2,4 MM	1,1 MM	1,6 MM			2 / 53	2 / 48
4100	Present conditions in ports		XX						-	0,4 MM	-	-				
4200	Requirem. for ferry connection		XX						0,3 MM	0,3 MM	0,4 MM	0,4 MM			0 / 5	0 / 5
4300	Ferry operation company		XX	XX					0,6 MM	0,6 MM	-	-			0 / 5	0 / 4
TOTAL									43,7 MM	43,7 MM	13,2 MM	13,2 MM			36 / 556	22 / 490
															30 / 420¹	30 / 502²

¹ incl. 30 flights / 420 p.d. trainees (Study Tour to Germany)

² incl. 30 flights / 502 p.d. trainees (Study Tour and Managerial GRID®-Seminar)

RESOURCE UTILISATION REPORT

Project title : Joint Venture(s) for the Caucasian Railways			Project number : TNREG 939401			Country : Armenia / Azerbaijan / Georgia			Page : 1	
Planning period : 03/97 - 08/97			Prepared on : 15/09/97			EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin				
Project objectives : Promoting the establishment of cooperation between the Caucasian railways and the creation of joint ventures for infrastructure rehabilitation and train operation services										
RESOURCES/INPUTS	TOTAL PLANNED		PERIOD PLANNED		PERIOD REALISED		TOTAL REALISED		AVAILABLE FOR REMAINDER	
PERSONNEL										
Short term experts:	EC	locals	EC	locals	EC	locals	EC	locals	EC	locals
001 / 2	42,0	4,0	21,0	1,5	21,0	1,5	42,0	4,0		
1100	6,9	8,5	2,1	1,5	1,5	1,5	6,3	8,5		
1200	3,6	6,0	1,8	2,0	2,2	1,5	4,0	5,5		
1300	2,9	1,5	1,3	0,3	1,5	0,8	3,1	2,0		
2100	3,1	4,5	0,0	0,0	0,0	0,0	3,1	4,5		
2200	7,2	3,0	3,0	1,0	2,5	1,5	6,7	3,5		
2300	3,8	1,5	3,8	1,5	4,3	1,0	4,3	1,0		
3100	2,6	4,5	0,8	0,9	0,8	0,9	2,6	4,5		
3200	3,8	3,6	1,0	0,6	0,7	0,5	3,5	3,5		
3300	6,2	2,4	5,4	2,4	5,5	2,0	6,3	2,0		
3400	2,6	1,1	2,6	1,1	2,4	1,6	2,4	1,6		
4100	0,9	1,2	0,0	0,0	0,4	0,0	1,3	1,2		
4200	0,7	1,2	0,3	0,4	0,3	0,4	0,7	1,2		
4300	0,7		0,6	0,0	0,6	0,0	0,7			
Sub-total	87,0	43,0	43,7	13,2	43,7	13,2	87,0	43,0		
EQUIPMENT AND MATERIAL										
Sub-total										
OTHER INPUTS										
Sub-total										
TOTAL	87,0	43,0	43,7	13,2	43,7	13,2	87,0	43,0		

OUTPUT PERFORMANCE REPORT

Project title : Joint Venture(s) for the Caucasian Railways	Project nr : TNREG 939401	Country : Armenia / Azerbaijan / Georgia	Page : 1
Prepared on : 15/09/97		EC Consultant: TEWET Transport East West Expert Team GmbH, Berlin	
Output results	Deviation original plan + or - %	Reason for deviation	Comment on constrains & assumptions
<p>To avoid doubling of reporting the report on output of the reporting period is incorporated into the "Output performance summary"</p>			

4 Overall report on the total project

According to the tasks laid down for the project in the Terms of Reference work focused on the following ones:

- market analysis on the development of passenger and freight transport
- analysis of the financial status and the financial development
- analysis of the organisational and legal/administrative regulations for the technical and technological conditions of the railways and deduction of conclusions for the improvement of regional cooperation
- analysis of the technical conditions of the three Caucasian railways and quantification of the necessary investment and repair requirements; assessment of the necessary measures according to their priorities and sequence
- identification of projects in the infrastructure area of the railways suitable for forming joint ventures and assessment of the legal, administrative, organisational and economic preconditions and basis
- investigation of the framework conditions and preparation for forming joint venture as operating companies in the freight and/or passenger transport fields

The Traffic volume forecast and especially the freight traffic forecast was a main point of the investigations and formed the basis for further analyses and conclusions:

As traditional mathematical and statistical methods of traffic forecasts, normally used under West European conditions, do not apply to the prognosis of traffic flows under the current situation in East European countries, a methodology was applied in drawing up the traffic volume forecast, tailor-made for the conditions of the East European reform states. This special methodology of the Consultant bases on the analysis of the following main elements:

The most important initial item to be analysed for assessing the future traffic volume is the development of the main economic indices, especially the Gross Domestic Product (GDP). The assumption is that there is a close connection between the development of the GDP and the total traffic volume of a country, which has been extensively proved by analogue investigations in various European countries and for different periods of time.

The development of selected branches of the economy as well as the foreign trade relations of all concerned countries, which are of special importance for the traffic volume of the railways, have been assessed in detail to further verify the forecast.

The possible development of the mentioned factors is depicted in two scenarios, an optimistic and a pessimistic one.

On the basis of assessing all these above-mentioned factors and a special inter-linking of them annual growth rates were deducted for the development of the transport volume in the mentioned railway traffic for the period up to 2015, divided according to domestic traffic, export, import, transit and that in the respective two scenarios. The statistical data for 1995 served as reference figures. Separate assumptions on the production and trade volume were made for individual types of goods, which are of particular importance for the total traffic volume.

Based on this total development, the transport volumes of the main Caucasian railway line were assessed according to the same method.

Based on the analysis described above, the following total transport volumes and transport performance result for the forecast period:

Freight Transport volumes up to the year 2015

		1989	2000		2010		2015	
			opt.	pess.	opt.	pess.	opt.	pess.
freight transport volume (‘000 t)	ARM	33,868	2,269	1,535	3,357	2,242	4,238	2,726
	AGZD	91,363	20,102	12,992	29,690	20,519	34,825	23,685
	GRZD	36,190	9,525	4,477	15,268	7,611	17,470	9,135

The passenger transport is of minor importance for the railways, because the passenger transport does not cover its costs and the resulting deficits are not compensated by local authorities or the governments. Nevertheless a detailed forecast was also carried out with the following main results:

Rail passenger Traffic up to the year 2015

		1997	2000	2010	2015	
passengers (‘000)	ARM	o	1,796	1,975	2,532	2,801
		p	1,701	1,665	2,013	2,122
	AGZD	o	4,333	5,205	9,396	10,717
		p	3,644	3,292	4,457	4,709
	GRZD	o	3,218	3,632	5,700	6,920
		p	3,094	2,907	4,260	4,773

The investigations regarding the financial situation of the railways were focused on

- the detailed analysis of the financial status (consolidated balance sheets)
- the deficiency analysis of the accounting system and the development of recommendations for improvements
- the processing of a financial forecast, using different scenarios for the development of tariffs and the investment volumes to be realised

The main results are:

- The overall profitability of the railways is clearly negative if the present price level is kept unchanged, and the break-even point is far away;
- The railway system as a whole is able to become fairly profitable if reasonable price increases are introduced, along with an improved marketing policy, an improved service and some structural and organisational changes;
- A reduction of the investment programme by eliminating the components which are not indispensable for keeping the essential assets in safe working condition is necessary;
- The solution of some questions concerning the relation between governments and railways, for example
 - responsibility of the governments for the railway infrastructure development
 - compensation of deficits created by governmental decisions (social benefits etc.)is of essential importance for the future of the railways.

The investigations on the technical situation of the there railways and the necessary rehabilitation measures concentrate on the following areas

- track, bridges
- signalling / telecommunication
- power supply
- stations; terminals
- rolling stock; workshops

The focus was on measures to stabilise and develop freight transport, as positive contributions to the balance sheet of the railways may only be expected from freight transport. The rehabilitation requirements are enormous due to the long years of neglect and partial destruction of installations and rolling stock, and they exceed the local and international financing possibilities by far in view of a total volume of US\$ 2,7 bn required for investments plus annual 275 m US\$ for maintenance and depreciation up to the year 2015. Even the most urgent investments up to the year 2000 amount to approx. US\$ 492m for infrastructure rehabilitation excl. rolling stock.

The problem of financing the necessary measures for rehabilitation of the most important lines and the rolling stock needed has to be considered in the overall picture of the development of the railways as such.

The Railways are presently operating under severely harsh financial conditions: The collapse of the economies brought about by the political changes has greatly affected the Railways. They are now confined to operate on a much smaller scale in which the maintenance of the systems suffers under the lack of sufficient income from their activities.

The measures recommended in this study to rehabilitate the systems require enormous financial investments, which must be repaid out of future income. It is important therefore that the investments undertaken be sustainable. For this to happen it is essential that the necessary maintenance programmes be followed and the required reserves for replacement of assets be charged against future income. In recent years the Railways have been drawing on their substance to assure continuance of operations, resulting in serious shortcomings in the maintenance of their assets, cannibalisation and depletion of capital. For the recommended measures to be effective it is necessary that these practices be replaced by strict adherence to effective measures aimed at the upkeep of the assets.

It seems to be necessary to concentrate in the first instance all financial funds available on the most profitable railway lines and services. That means to rehabilitate the lines

- Poti / Batumi - Tbilisi - Baku
- Tbilisi - Gyumri - Yerevan

and after solving the political conflicts to rehabilitate additionally the lines with special importance for transit transports.

Main emphasis has to be given to the development of freight traffic in connection with improved marketing and organisational changes in the railway administrations.

One of the main tasks of the project is the investigation regarding the possibilities of closer cooperation between the railways concerned by forming Joint Ventures. Different options were checked and rated and four selected for deepened investigations:

- production of prestressed concrete sleepers
- rehabilitation of the telecommunication system
- repair / overhaul of electric locomotives
- creation of operating companies for combined transports (in the first instance the TCLE)

The main results and conclusions are:

Concrete sleepers production

In the region the creation of a sleeper production, irrespective of the implementation form, is recommended due to the following reasons:

- due to the new technology, the life time will increase from 15 to 25 years on the average, thus decreasing maintenance costs;
- the high quality of the European prestressed concrete sleepers (DSA Type) and the new W-fastening technology significantly reduce the maintenance costs;
- 10% less sleepers per kilometre will be needed due to increased distance between two individual sleepers, thus reducing costs per kilometre;
- the expected total production costs per sleeper will be lower than the actual purchasing price, which is approximately 50-60 US\$ (incl. fastening)
- investments volume is acceptable compared to the countries' economy
- short construction time (approximately 9 months)
- high value added rate in the region

Considering the results of the demand analysis and the optimum operation values, one should assume two consumer markets : Azerbaijan (the East supply area) and Armenia/Georgia (the West supply area).

The location of the sleeper production in Dollyar and Tbilisi has been recommended, particularly, due to the given geographic and economic preconditions. This reflects the main idea about mutually beneficial economic co-operation in the whole region, but is contrary to the intention of each of three countries to have her own factory.

Repair of electric locomotives

The bad condition and the out-of-date technic of the electric locomotive fleet are the key problems of the Caucasian Railways concerning rolling stock. Therefore, a well balanced combination of partly maintaining the old locomotive fleet, partly renewing by re-motorisation and partly procuring new locomotives after 2010 was proposed. However, in order to ensure the maintenance capabilities for overhauls as well as for Re-equipping (Re-motorisation) there is an urgent need to refurbish the respective shops and the concerned halls of the Tbilisi Electro-Locomotive Factory (TECF).

Taking into consideration the high financial load of both the needed investments inside TECF caused by the backlogs in maintaining the civil constructions, installations and equipment of TECF and overcoming the high distance to modern technical and technologic solutions for locomotive design and construction the best way for solving all these difficulties seems to be creating a Joint Venture of the interested Caucasian Railways and international locomotive producer(s).

The realisation should be organised step by step:

- first phase: formation of a JV between the railways and a contractually secured cooperation with an international locomotive producer to organise a common basis for repair / maintenance
- second phase: involving the international partner as share - holder to organise also reconstruction / re-equipment of old and construction of new electric locomotives.

Calculations showed that, depending from the overall number of locomotives to be repaired, the JV is financially viable.

Communication system

For the development of the communication network of the Caucasian railways three steps are recommended:

1. Creation of an ad hoc group for coordination and supervision of the Multi-national communication project
2. Creation of Telecommunication planning companies, one joint venture in each country
3. Creation of Telecommunication operating companies as national joint ventures

The financial evaluation shows, that the telecommunication divisions of each of the three Railway administrations will be able to achieve fairly good commercial returns on their investments, which will be paid back when the investment programme ends. It can be concluded that the communication network of the Railways can be financed by its commercial use. Only the negative cash flows appearing in the years during which the network is not yet operational commercially will have to be covered by the main activities of the Railways.

Operating companies

The creation of two operating companies,

one Azerbaijan - Georgian

one Armenian - Georgian

under participation of the railways, other local participants and of a well experienced European partner is strongly recommended for the further stabilisation and improvement of newly introduced transportation services in the Caucasian part of the TRACECA-corridor.

Main business objectives are:

- economical operation of container trains,
- providing transport services in combined transport,
- providing customer and market oriented transport service offers,
- private service provider for all forwarding and transport companies or other clients,
- Increase in the railways' share of the total transport volume in container transport from a current 20% to 40% for 1997 to 65% in the year 2000

The financial evaluation shows, that the establishment of the operating companies requires little investment costs. As payment in advance is now common practise, working capital for one month's expenses is sufficient.

The funding requirements, which should be covered by share capital, will be paid back by the profits (after profit tax) within one year for the Georgian - Armenian company and after 2 years for the Georgian - Azerbaijan company.

The private operating companies are therefore financially viable under the assumptions made.

Also in the pessimistic traffic scenario, both operating companies would still have comfortable profits.

PROJECT COMPLETION REPORT

Project title : Joint Venture(s) for the Caucasian Railways		Project nr : TNREG 939401	Country : Armenia / Azerbaijan / Georgia	Page :1
Reporting period : 07/96 - 08/97		Prepared on : 15/09/97		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin
REPORTING PERIOD	MAIN ACTIVITIES UNDERTAKEN	EC CONSULTANT	INPUTS UTILISED	
			MATERIALS AND EQUIPMENT	OTHER
07/96 - 02/97	<ul style="list-style-type: none"> • project management, reporting • analysis of technical, technological, financial conditions • traffic forecast • foundation of JV • port and ferry services 	21.0 man-months 12.8 man-months 3.1 man-months 5.4 man-months 1.0 man-months	PC, printer, copier	36 flights, 561 DSA
03/97 - 08/97	<ul style="list-style-type: none"> • project management, reporting • investment plan infrastructure • financial forecast • business plans for JV • port and ferry services 	21.0 man-months 9.4 man-months 2.6 man-months 9.4 man-months 1.3 man-months	teaching materials (Managerial GRID-seminar)	22 flights, 490 DSA + 30 flights / 502 DSA (trainees)
TOTAL		87.0 man-months		58 + 30 flights 1051 + 502 DSA

OUTPUT PERFORMANCE SUMMARY

Project title : Joint Venture(s) for the Caucasian Railways	Project nr : TNREG 939401	Country : Armenia / Azerbaijan / Georgia	Page : 1
Prepared on : 15/09/97		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin	
Output results	Deviation original plan + or - %	Reason for deviation	Comment on constrains & assumptions
<ul style="list-style-type: none"> • forecast of the development of freight and passenger traffic produced 	+10 %	it was planned to make use of the results of the „forecasting model“ project	the figures received were not detailed enough, therefore additional data collecting and harmonisation was needed
<ul style="list-style-type: none"> • assessment of the technical conditions of the three railways, focusing on their main network, especially on those lines with great importance for export / import/ transit - transport and catering more than 90 % of the transport performance 	- 10 %	it was possible to make use of the data already collected in Azerbaijan / Georgia during the processing of the „Pre - investment and Pilot - train“ project regarding the main line Baku - Tbilisi - Poti / Batumi	it was impossible to collect actual data concerning the rehabilitation needs of the railway line passing Abkhazia and the line connecting the Nakhichevan area
<ul style="list-style-type: none"> • economic and financial assessment and forecast of the railways; determination of the priorities and sequence of necessary maintenance and investment measures 	+ 10 %	because of the still existing FSU-fashioned financial reporting system there was a need to transform the data obtained into western calculation schemes; in order to take into consideration different possibilities for the development of prices and costs the processing of different scenarios of financial forecasting was needed	the FSU-fashioned balance system is not compatible with Western standards and regulations for balancing. Therefore there was sometimes a need to use own assumptions and calculations
<ul style="list-style-type: none"> • investigation for the formation of JV in the infrastructure area 	± 0	no deviation	-
<ul style="list-style-type: none"> • investigation for the formation of JV in the area of transport services 	± 0	no deviation	-
<ul style="list-style-type: none"> • development of business plans for the proposed JV 	± 0	no deviation	-
<ul style="list-style-type: none"> • railway staff trained in modern management and marketing methods / technical procedures and standards 	± 0	no deviation - Study Tour and GRID-seminar realised according to original plan	-

Project title : Joint Venture(s) for the Caucasian Railways	Project nr : TNREG 939401	Country : Armenia / Azerbaijan / Georgia	Page : 2
Prepared on : 15/09/97		EC Consultant : TEWET Transport East West Expert Team GmbH, Berlin	
Output results	Deviation original plan + or - %	Reason for deviation	Comment on constrains & assumptions
<ul style="list-style-type: none"> • establishment of a „Logistic Express Poti - Yerevan“ 	+ 100 %	task additionally included after the successful introduction of the TCLE on the Poti - Baku - line	the train's running started in late July 1997; further monitoring not possible for project duration reasons
<ul style="list-style-type: none"> • detailed information material concerning the following problems elaborated and handed over: <ul style="list-style-type: none"> - survey of international agreements / conventions with importance for the railways - description and application of modern power supply systems 	+ 100 %	special request of the railway administrations / exports to obtain detailed information	there is a lack of information concerning western regulations, technical and technological solutions
<ul style="list-style-type: none"> • technical specification of a 15 MECU EU-funded grant for the improvement of the railway communication system in the three Caucasian countries 	+ 100 %	on request of the TRACECA - management team and the task manager	

5 Lessons learnt and recommendations

problems identified/ lessons learnt	conclusions/recommendations
<p>General</p> <ul style="list-style-type: none"> - The final recipients had not been informed about the project contents in advance or expected other main points and results due to the project name. - The readiness for cooperation is only little developed due to the difficult situation of all railways and manifold domestic problems and difficulties in the relationship of the countries among one another. - European partners are prepared to enter joint ventures in the area of infrastructure in the region only under certain prerequisites and framework conditions. - The financial analysis shows that the railways will not be able to finance the necessary investments, maintenance cost and depreciation, even given a positive development. 	<p>Even then signing of a 'Statement of Endorsement' at a high political level will not provide a guarantee for the acceptance of the project contents, according to the ToR, by the final recipients. Intensive coordination of the ToR with the final recipients before the start of the project tender would make a speedier and smoother start of the project work possible.</p> <p>Permanent influencing by the EU Commission and Takis/TRACECA management in order to make clear the necessity and usefulness of regional cooperation. The positive experience from the meetings and negotiations as a multilateral level within the project show the value of organising opportunities of conducting meetings and exchanges of opinion between the railways.</p> <p>Decisive conditions are:</p> <ul style="list-style-type: none"> - secured demand / sales - support of the project not only by the railways but also by the responsible governmental bodies - readiness and ability of the local partners to take over adequate shares of the risk and financing - sufficient security for loans and the fulfilment of obligations by the local partners <p>The relationship between the state and the railways has to be defined clearly and put on a sustainable legal foundation. Comprehensive reforms are long overdue.</p>

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| <p>– The railways are burdened with services by the state which are atypical for their normal operation and this without a respective compensation of the costs.</p> | <p>There has to be a clear delimiting of the railways' tasks and elements of cost reimbursement for societal services provided in passenger and freight transport have to be introduced.</p> |
| <p>– The process of preparing and implementing the setting up of joint ventures between partners of the region, with or without European participation, requires permanent accompaniment and political support.</p> | <p>The implementation of the prepared suggestions is to be supported by suitable steps taken by the EU.</p> |
| <p>– Without a concentration of the railways on their profitable lines and services, no financial and thus infrastructural and business consolidation can be achieved.</p> | <p>It would make sense to draw up concrete rationalisation programmes for the respective railways, including basic structural changes, based on an evaluation of the results yielded by the manifold TRACECA projects.</p> |
| <p>– The pressing proposals for setting up joint ventures and the speediest to implement are:</p> <ul style="list-style-type: none">• concrete sleeper production• operating companies for combined transport | <p>The steps towards implementation which have already been started have to be continued consistently and accompanied by support from Takis/TRACECA.</p> |
| <p>– A project duration of 10 months has to be regarded as unrealistic given the scope of the project and the complexity of the existing territorial and political framework.</p> | <p>The decision on project duration should consider more the territorial peculiarities as well as the contents of the projects.</p> |