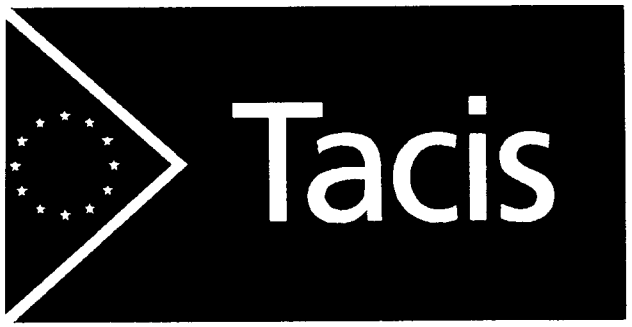

Georgian Railways Restructuring

Final Report, volume 3
Experts' Commentaries

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RESTRUCTURING OF THE GEORGIAN RAILWAYS

INSTITUTIONAL & MANAGEMENT REORGANISATION

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CONTENTS

1 INTRODUCTION

This report presents proposals for a new operating concept for the Georgian Railways (SR) designed to improve its performance and efficiency over a period. It will be necessary to adjust the system to bring it into line with the demand and to concentrate on the types and volumes of traffic which the railway can handle most economically. Substantial investment will be required to upgrade the system and its infrastructure.

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2 STATE/RAILWAY RELATIONSHIPS

2.1 The need for external restructuring

The internal reorganisation of SR as will be proposed in this report will not be sufficient to prepare the present railway administration of Georgia for the future challenges. As was the case with railways in most Western European countries Georgia Railways need entrepreneurial autonomy in order to survive and perform well in the a rising national and international transport market. This can only be achieved if the relationship between the State and SR is completely reshaped. We call this the external reform of SR. A number of good reasons can be given to the Government of Georgia why the ongoing discussion of the draft for a new railway law should be used to get the reshaping process started.

At the moment Georgia Railways

- Is a State Enterprise but operates without any charter
- Works to old Soviet norms
- Lacks autonomy
- In addition to rail transport is a provider of social services-education, hospitals.
- Lacks entrepreneurial spirit
- Provider of uneconomic passenger services

2.2 Appraisal of present situation

2.2.1 Need to save public money

Georgia is a country trying hard to develop its economy and the living standard of its population. In order to achieve this, capital investment is necessary. As money is scarce it must to a certain extent come from abroad. As the experience in other parts of the world has shown railway restructuring and streamlining can essentially reduce the financial burden on the government (and the tax payer) and set free capital that might be used to develop the railway system faster or spent for other purposes.

2.2.2 Need to attract private capital

t would also be a benefit for the government budget if private capital could be attracted to investing into some of the rail activities. Prerequisites for interesting private capital are efficiency and business profitability or at least a solid prospect for it. There are doubts that this exists at the moment as there are question marks about micro-economic profitability of some parts of SR's traffic. Private risk capital cannot be attracted as long as SR is maintained as a government administration.

2.2.3 Role of banks

Generally development banks will lend money to organisations if they are satisfied that that there is a sufficient return on investment and the investment meets the strategic objectives in the development of the economy of the country. In relation to state organisations banks will want to see organisations restructured to compete in a market environment. In essence it is necessary to show that the enterprise will be sustainable into the future.

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2.2.4 Present monopoly position of SR will not last

The present monopoly or Georgian Railways will not last as the Georgian market economy develops.

The present situation could lead the transport policy deciders in Georgia to the conclusion that external restructuring of SR is not urgent. It is true that SR has not only a rail traffic monopoly but a factual monopoly at least in the sector of long distance traffic in general. In freight traffic for example SR carries an extremely high proportion of all the tkm carried in the country. While it has not been possible to determine exact market share it is likely to be greater than 80%. This means that it can hardly be spoken of as a transport market in the sense that there is real competition between the modes with regard to quality and price, as is the case in all West European countries. For many international freight transports the railway is presently the only possible mode.

However, the situation will change in the coming years. Market economy will be introduced, road infrastructure will improve essentially under the pressure of the owners of private cars, and the emerging freight truckers will take advantage of this, and as the experience with other countries of the former Soviet Union shows - real competition for the railways will arise. It is therefore in the interest of the Republic of Georgia that SR as an energy-efficient and environmentally-friendly means of transportation with an extremely high rationalisation potential, will be prepared for the coming changes. It is an advantage that this has not to be done in a rush but in carefully planned steps and the present strong position of SR can be used to consolidate the future. Restructuring has to start now.

2.2.5 International dimension

Most of the issues that impinge on the relationship between state and the railways are common throughout Europe in particular. Therefor a lot can be learned from the experiences in these countries. In making proposals for Georgian railways one must be conscious of the culture and legal requirements of the country.

The railways in Georgia form a vital link between east and west and vice a versa. The route between Baku in Azerbaijan and Poti in Georgia represents the main TRACECA route from Central Asia and China to Europe and connects with the EU CORRIDOR No 4. While connections to Russia through the west of the country are currently closed due to the political unrest this route will hopefully restored in the future.

Railway transit through Georgia will have more competition by other modes and by routes through other countries. In order to survive in this difficult market it will not be sufficient to offer a high technical standard in the fields of infrastructure and rolling stock but, also a customer-oriented and service-minded high quality organisation will be needed to an extent which can in no way be ensured by a government administration. The globalisation of competition is not confined to the industrial section but also to the service sector of which SR is the main player. This does not allow for the postponing the necessary reform.

The railways are lucky at the moment in having a reasonable infrastructure in place (although it needs substantial investment) and it will be a number of years yet before the road infrastructure improves sufficiently to offer serious competition.

2.3 Policy issues

Comparing the present situation of SR with the objective of transforming it into a commercially-acting, market-driven and financially self-sustaining organisation it is evident that a certain number of issues have to be solved in the restructuring process.

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2.3.1 Harmonisation of competition

It is in the interest of the state to have competition in the transport sector in such a way as hidden subsidies are eliminated and that there is a "level playing field" for all transport modes.

This is particularly true for road and rail. The cost of road infrastructure is often carried and hidden in a central budget, and is not recovered from trucks, cars, and buses which use the road infrastructure. On the other hand the costs of renewing and maintaining the railway infrastructure is clearly identifiable and are charged in full to the railway. This is a matter which should be addressed taking into account the external costs of both road and rail transport modes.

2.3.2 Government managed enterprise

The experience in the countries of Western Europe with a tradition of state owned companies and heavy state participation in the economic activity of the country has shown that in the long run this is not only very costly but also very often inefficient. State run enterprises have enormous difficulties to compete with private ones in the deregulated market. That is why there should be a decisive move towards separating economic activities as far as possible from true government functions such as ensuring fair competition on the market, safety, control, regional development, social welfare etc.

2.3.3 Incompatibility of government's and railway's interests

The hierarchical subordination of the railways under the government can lead and mostly does lead to management decisions that are not compatible with the entrepreneurial, particularly commercial, interests of the railways, which will have to obey the rules of the rising transport market.

2.3.4 Public service obligations

One of the objectives of the state should be to ensure the continuing availability of passenger services at an affordable price in certain circumstances. The service should be provided in a cost effective way in order to reduce the drain on public funds, and could include railway services.

This PSO (public service obligation) is typically represented by an obligation to provide adequate capacity on specific routes with a specified frequency and quality of service

Public service obligations (for example extremely low tariffs) are imposed on SR in the general interest of the country but financially they are not always compensated sufficiently. This doesn't make it a priority for SR to invest into certain services and the result can be a reduction of quality and therefore, at least potentially, a decreasing quantity of transport services. In the long run such a policy can show disastrous results for the railway enterprise.

2.3.5 Price controls

If no competition or only limited competition exists for the provision of services under a PSO it is normally a Regulator who will define the level of prices which the operator should charge the customer.

This level typically allows the operator to cover his costs and make a modest profit. It would be to the advantage of the operator if he or she could improve productivity thus reducing the cost and increasing profit.

If the price level does not allow the operator to cover the costs and it cannot be raised for social or other reasons then it is traditional practice for the state to reimburse the difference so as to allow the operator to deliver the service.

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2.3.6 Human resources

Over-staffing has been a major problem of most railways all over the world. SR is not an exception. As mentioned earlier in this report both passenger and freight traffic have decreased immensely since the breaking up of the Soviet Union. Freight has reduced from 91 ml tonnes in 1991 to 9 ml tonnes in 1997 while at the same time staff levels have only reduced by only 20%. Although this traffic decline seems to have come to a halt in the recent past and although international freight traffic particularly has started to grow again to an encouraging extent it would be an illusion to think that, under normal circumstances, figures of former decades could ever be reached again.

As the cost structure has not followed the decline of traffic and revenue, all necessary and possible measures to adapt the railway organisation have to be undertaken. Next to the other restructuring measures, staff reduction has to go on as staff costs represent a large part of the total cost of the enterprise. It is true that from the 28,500 staff in 1991/92 a number of roughly 22,000 has been reached at the beginning of 1997.

It must be recognised, however, that in the present economic and social situation of Georgia and according to the consultant's experience with other countries, it is impossible to take measures which are too radical in this respect. On the other hand this social problem cannot be left as a burden solely on SR because the real cost structures would be falsified in that case, and for a commercially acting corporation there is nothing worse than lack of transparency and unjustified over-costing.

This is not helped by the present law, which allows staff to work after they reach the age of sixty five if declared medically fit. This situation is encouraged by the fact that state pensions are currently very low in Georgia.

In reality it is the task of the state to deal with this social problem, and if the state wants to use SR as an instrument to solve it then this is a good example for a service in the public interest which has to be compensated financially by the Government. On behalf of the state, SR can and should of course put up a program of financing early retirement, training and retraining etc. and contribute actively to further possible solutions. But if the new corporation is to be given a fair start, it must be done without this financial burden.

As a means for solving the overstaffing problem we recommend that the ban on recruitment which we have been advised already exists should be continued.

A voluntary redundancy program should be introduced.

On the other hand we acknowledge that existing staff cannot be completely retrained and that in certain sectors, as for example in information technology, young specialists will have to be hired.

Therefore we advise that exceptional recruitment must remain possible but must underlie a precise justification procedure with at the end of it the agreement of the highest possible authority.

2.3.7 Third party access

In a market economy competition is an essential element. It is therefore necessary to allow third party access for train operation on the railway infrastructure. Any new legislation proposed by Government should take cognisance of this.

This would allow private or state owned companies to operate their own trains and compete with SR for business.

Competitive pressures, cost reduction and innovative ideas may result in reduced transport costs to the customer.

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2.3.8 Role of freight forwarders

It is understood that most traffic movements with an international dimension is organised by freight forwarding organisations and this role has passed from being operated directly by the railways to private limited companies. These play an important role in developing business for the railways, and is an example of part privatisation. The number of freight forwarders operating will ensure a competitive situation.

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3 PRIVATISATION OR CORPORATISATION?

3.1 Joint stock company or limited liability company

The further development of SR and the reshaping of the relationship between SR and the Government will have to take place within the larger environment of Georgia's situation in general and its economy in particular. This environment has to be reform-friendly. In other words, it would be premature to push SR into an isolated privatisation process without having similar development in the other branches of the economy. Georgia seems far from having a market economy. Its backbone economic activities are presently to a very large extent government driven and controlled. This is the reason why out of the three options.

- retain present arrangement,
- privatise the railway and then make it efficient, or
- make the railway efficient (corporitise-joint stock company) and privatise at a later stage if this is considered desirable.

It is recommended that the third solution be adopted ie the corporatisation of SR as described later.

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4 PROPOSALS FOR A NEW STATE/RAILWAY RELATIONSHIP

4.1 Existing situation

As was the case in West European countries before the restructuring of their railways it seems that the Georgia Government plays a multi-functional role vis-à-vis SR, namely as

- the requirer of services of public interests from the railway;
- the owner of the railway
- the financing body of large parts of SR's capital needs;
- the political institution getting involved in railway matters on behalf of the general interest of the country.

The result is a lack of transparency in the relationship between state and railways, which makes it difficult to fix business responsibility, and prevents a clear answer to question whether SR as a whole or its individual performances are micro-economically profitable or not. The existing relationship between state and SR should be changed in the sense that entrepreneurial and state functions should be clearly separated and excessive involvement of the state in the business management of railways eliminated.

4.2 The future role of Government

The future role of Government initially would be that of

a) the owner, of the railway infrastructure (not the operator which will be operated under commercial principles).

b) the railway sector supervisory authority, particularly concerning safety, guaranteeing fair competition between the modes, licensing railway enterprises and deciding on transport policy in general,

c) the purchaser of all services which are in the global interest of the Republic of Georgia and defined in private law contracts between SR and the purchasing bodies,

d) the provider of finance for the investments into the transport infrastructure of the country on an equal basis for all transportation modes.

It is also recommended that not all of the remaining state functions should be performed by the same government body, like for example the Transport Ministry, but by several.

Thus

a) may be in the responsibility of the State Property Ministry (or similar),

b) in that of the Transport Ministry,

c) in that of the bodies deciding about services in the general interest, like the Ministries responsible for social welfare, defence, regional development etc. using their own budget respectively for the purchase of the services, and

d) in that of the Transport Ministry and the Finance Ministry.

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4.3 The role of the state with respect to infrastructure

The railways are of vital importance to the economy of the country. The railways forms the main transport link between east and west and will in the future become more important as traffic to and from Central Asia and China develops.

For these reasons it is the consultants view that the infrastructure should always remain the property of the state.

The state will keep a public service responsibility in the field of infrastructure investment. It is recommended that the Government - according to the budget possibilities and the criteria of fair and equal treatment with respect to other modes - will assist in financing SR's investments into infrastructure.

4.4 Fair Competition

At present the Government is responsible for the development of the road system in Georgia. It seems only logical that in the in order to provide fair competition that the Government should have the responsibility for developing and maintaining the railway infrastructure.

Part or all of the cost of this investment should come from charges, which would be imposed on the railway operators as will be described later

All other investments, particularly investments locomotives and rolling stock, should be financed by SR itself.

When creating the new Railway Corporation it has to be made sure that the Government as the owner not only provides for a good legal basis start but also for a healthy capital basis which will permit a normal investment policy.

4.5 Regulation of the railway

Nowadays most of the World's Railways are regulated and supervised by a Railway Department in the Ministry of Transport. It is recommended that the Government of Georgia give consideration to the setting up of such a Division, having the following primary functions:

- licensing the competence of the railway operators and their rolling stock
- supervising public safety in railway operations by establishing a railways inspectorate with right of access to inspect the railway infrastructure; the inspectorate to request the State where necessary to make regulations

Other government ministries will have responsibility for

- entering into agreements with SR on the maintenance and specification for development of the infrastructure and the cost and time within which this will be done;
- entering into agreements with SR and other railway operators for the discharge of Public Service Obligations (including free and concessionairy travel) on a contractual and commercial basis;
- entering into a performance agreement with SR and monitoring compliance. In this connection it is believed that if SR exchanges its monopoly for a system of ongoing

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performance agreements (with appropriate adjustments mechanisms for accommodating unforeseen circumstances) greater trust will be established in the relationship

- specifying the form of accounts to be maintained by SR and other reporting requirements; undertaking the function of price control, where the protection of customers in monopolistic situations is necessary;

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5 INTERNAL REORGANISATION OF SR

5.1 Introduction

The re-structuring of SR cannot be achieved satisfactorily unless a new management organisation structure is put in place. The present organisation has served the railway well over the past few years since the break-up of the former Soviet railway system in laying the basis for a separate independent national railway administration of Georgia.

SR must urgently be made more efficient and customer-oriented, must reduce its production costs and reach a higher degree of transparency in its decision making process in order to be prepared for the rising transport market in an increasingly deregulated economy.

It is generally considered desirable to have separate funding, accounting and management for infrastructure, which is seen as a public-funded asset, in the general interest.

There is a need for greater commercial freedom and separate accountability in the provision of passenger and freight services. There is a growing trend internationally to consider third party access to national rail systems. Although this is unlikely to be a short term requirement for SR, it can be considered as a real longer-term possibility, given the increasing volume of international transit traffic through Georgia, and the general tendency of replacing monopolies by competitive systems leading to cost reducing pressure as well as better performance and innovation.

5.2 Present organisation structure

The present organisation structure of SR shown on the chart in the annexes is characterised by a strict top down management. It appears to leave hardly enough flexibility margin for business management at the Director General level, and even less farther down the hierarchy. Except for minor changes, this seems the case for all organisational measures, such as the fixing of tariffs, rates and fares, decisions concerning investment priorities, staff numbers etc.

5.2.1 Director General

The railway organisation is formally headed by the Director General(Chairman) who co-ordinates the different services. The Director General is appointed by the President. The organisation is based on a purely functional basis with the main functions the responsibility of five Deputies who report directly to the Director General.

The most important administrative units are headed by five Deputies

5.3 Organisation principles and trends

5.3.1 Functional organisations

Traditionally railways all over the world have in the past organised their management structures on functional principles. This involves grouping activities according to their different functions. A functional approach to organisation has also been common in many other types of enterprise. Manufacturing companies, for example, frequently organise their activities around marketing, engineering, production and finance.

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The functional principle of organisation is a well proven management system. It provides for strong centralised top down management and control as is presently the case with SR. It makes efficient use of people and their specialised skills, and facilitates training and development of staff. It provides a logical basis for allocation of separate functional responsibility.

However, a functional-type organisation structure also has certain disadvantages which become all the more evident as well defined business responsibility decides about success or failure in a market driven economy. Functional departments can become too focused on their own speciality and fail to act in a way, which achieves the overall objectives of the enterprise. Departments can become over-specialised, uncoordinated with other departments and resistant to change. Only the Chief Executive can in that case be held responsible for profit performance, and this is an unnecessary and inconvenient high level of hierarchy.

5.3.2 Strategic business units

In order to overcome the disadvantages of the functional type of organisation, many enterprises now organise their management structures on the basis of product or service. The Chief Executive can delegate responsibility to product managers whose units are largely functionally self-sufficient and who can therefore carry real profit responsibility. The contribution (in profit or loss) of individual products or services can be more readily identified at corporate level.

There is a more recent development of the product-type organisation, which has proved very effective. This involves the creation of Strategic Business Units (SBUs) within the enterprise. SBUs have their own product or service line, have their own marketing, sales and production, their own regional and local management representation, with real profit responsibility. They develop their own missions and goals, within the framework of the corporate mission, and prepare their own strategic plans. SBU managers are expected to have the drive and entrepreneurial skills of the manager of a private business.

5.3.3 European trends

Many railways all over the world are re-organising at the present time. Most and not only in Western countries are moving away from functional organisations to a greater or lesser extent.

Great Britain has established separate private companies providing the various services.

Sweden has transferred infrastructure to a separate state administration, and the rest of the railway is divided into business units covering passenger and freight operations, rolling stock maintenance and property.

Both the Netherlands and Spain are moving to a structure based on strategic business units, one each for the passenger and freight businesses, infrastructure, rolling stock maintenance, and property. The Director General co-ordinates the activities of the business units, supported by a small headquarters group.

Germany has restructured its railways in a similar way and in the future the business units will be developed into separate limited stock companies co-ordinated by a management holding company. It has opened the infrastructure for third parties access who have the same rights and obligations as the national railway's own freight and passenger business units.

5.3.4 Management of change

Current management practice suggests that the decision making process be devolved down the organisation to the lowest possible level. This sometimes causes concern particularly at middle management level who sometimes feel that they are losing power. As far Georgian Railways are concerned this management of change and culture may in fact be its greatest

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challenge. To be successful it requires to be driven from the top and requires the commitment of all concerned.

5.4 Proposed internal organisation structure

5.4.1 Overall structure

A proposed new organisation structure chart is shown in the annexes. It is based on the principle of separate Business Units for passenger and freight services, which are the main commercial activities of SR, as well as for infrastructure management and rolling stock maintenance unit which will provide the rolling stock to the operating units. It is proposed to set up an ancillary business unit which will deal with all non core activity..

5.4.2 Strategic business units (SBUs)

The separate establishment of the Infrastructure Business Unit will introduce costing transparency in this sector and will facilitate potential third party operator access in the future.

It is proposed that many functions be devolved to the SBUs; however there are other tasks which should be retained at SR headquarters outside the Business Units because they can be provided centrally more economically and effectively, or because they are essential to enable SR to operate as a single corporation. For this purpose we recommend the establishment of a unit for Corporate Services.

Each Business Unit should be responsible for its own marketing and sales, be they performed within or outside the corporation, for the operation of its services, the management of its own staff and its own accounting and controlling. This will create specific cost consciousness, will allocate profit responsibility to each Business Unit for the services it provides, and also give control over the resources it needs to achieve profitability. Each SBU will operate very much like a private commercial company. The guiding principle for a new organisation structure in detail must be that the Business Unit Management has a maximum influence on the development of costs related to its performance output. Another leading principle to be applied is that decisions should be taken as far as possible at the level on which the value is added.

5.4.3 Supervisory board

The new proposals call for the setting up of a Supervisory Board. This Board of Directors would be appointed by the government (as the shareholder) and generally consist of about seven to twelve people who would have a variety of skills including business people, an accountant ,a person with marketing skills. These would be all non executive directors.

Traditionally in western Europe the Chief Executive and Director Finance also sit as members of the Board. It is also possible to have trade union representation on the Board.

5.4.4 Executive board

We propose that each of the Business Units, the Service and Headquarters Units be led by a Director. These six Directors under the Chairmanship of the General Director, will constitute the Executive Board. The Executive Board should meet regularly in order to co-ordinate the activities of SR.

The Executive Board - chaired by the Director General - will be the supreme executive organ responsible for overall direction of SR in accordance with the corporate mission, strategy, policy and budget as established by law or as agreed with the Cabinet of Ministers.

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The Executive Board will co-ordinate the activities of the Business Units and the Services Units, monitor their performance and take corrective action where necessary.

The services which, we propose to be grouped in the Corporate Services Unit are

- Corporate Planning,
- Finance & Controlling,
- Computer Systems,
- Procurement and Real Estate.
- Organisation,
- International Relations,
- Human Resources,
- Legal Services and Audit.

5.4.5 Freight business unit

The Freight Business Unit will have its own marketing and planning, sales, stations as well as operating and technical, finance/controlling/administration and human resources functions with corresponding managers. It will develop and sell freight services in the national and international markets. It will operate its own locomotive and wagon fleet and the Rolling Stock Business Unit will carry out the major maintenance.

It will employ, manage and develop its own staff. It will prepare its own financial plans and budgets, and define its products/services. It will operate as a self-contained business with profit responsibility, within the overall corporate goals and strategies of SR, and in collaboration with the other Business and Services Units in SR.

The Unit's main functions will be :

- transport of goods in a safe, reliable, cost effective and profitable manner
- fixing of tariffs and rates
- development and marketing of logistical systems
- expansion of transit traffic and liaison with foreign customers, shippers and ports
- development of combined transport
- management of the assets like stations and freight terminals
- realisation of financial and other targets set down at SR corporate level
- day to day maintenance of rolling stock

The proposed organisation structure for the Freight Business Unit is shown in the Annexes.

5.4.6 Passenger business unit

Like the Freight Business Unit, the Passenger Business Unit will be independent and self-contained. It will be structured in a similar way with managers responsible for marketing and planning, sales, stations, operating and technical, human resources and finance/controlling/administration.

The main functions of the Passenger Business Unit would be :

- provision of cost effective and safe public passenger transport in the form of long distance (national and international) and commuter service with the goal of profitability
- ticket pricing and fare structure
- development of attractive future-oriented services for passengers
- management of the assets, particularly the passenger stations

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- management of coach fleet
- purchase of traction and coach maintenance from the Director Rolling Stock Business Unit.
- realisation of financial and other targets set down at SR corporate level

The proposed organisation structure for the Passenger Business Unit is shown in the Annexes

5.4.7 Infrastructure business unit

It is proposed that all infrastructure activities and functions should be grouped together in an Infrastructure Business Unit. This will facilitate separate accounting for the infrastructure and its separate funding from public sources and thus make it much easier to prevent cross-subsidies between the different functions in the Corporation. This is very much in line with international trends whereby the provision of the infrastructure is seen, on principle, to be a public service in the same way as is available for the competing modes. This facilitates an equal treatment of all modes and thus permits harmonisation of competitive conditions. When making contributions to the funding of transport infrastructure the state has the possibility and the obligation to take account of the social costs (pollution, accidents, energy provision etc.) caused by the different modes. It can support investments into the infrastructure of those modes which produce advantages for the country as a whole.

The establishment of a separate Infrastructure Business Unit will also facilitate charging for use of the infrastructure and access of third party operators, if that is considered desirable at some time in the future.

The Infrastructure Business Unit will be self-contained with its own managers for planning and for sales of train paths, for path management and operating, construction, track maintenance, signalling and communications, human resources, and finance/controlling/administration.

The Infrastructure Operations Manager will carry responsibility for central dispatching, controlling track capacity and train running for both passengers and freight. He will be responsible for the overall timetable and will have a neutral position with respect to selling train paths to the Freight Business and Passenger Business Units of the Corporation or to third party operators.

The main functions of the Unit would be :

- provision of a safe, high quality infrastructure system
- maintenance of the system in the most cost effective manner
- development of an infrastructure plan and of the corresponding implementation strategy in harmony with the SR overall corporate plan
- marketing of train paths with the minimum goal of covering the infrastructure costs. realisation of the financial and other targets set down at SR corporate level

The proposed organisation structure for the Infrastructure Business Unit is shown in the Annexes.

5.4.8 Rolling stock service business unit

We propose the establishing of Rolling Stock Business Unit, which will carry out major maintenance and overhauls for the Passenger and Freight Business Units on locomotives, passenger carriages, and freight wagons. It will operate as an autonomous enterprise with its own technical, workshops, accounts and human resource managers. It will negotiate contracts for the supply of maintenance services to the Passenger and Freight Business Units.

The option should be kept open for the Rolling Stock Unit to own rolling stock, which it would then lease to the Passenger and Freight Units to other licensed operators.

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The Rolling Stock Unit will be encouraged to provide engineering services to third parties on a commercial basis. There should be potential for expansion of profitable business, especially from industrial railways and other adjoining railways.

The principal functions of the Rolling Stock Service Unit will include:

- major maintenance and overhaul of rolling stock, including locomotives (electric and diesel), passenger carriages and freight wagons;
- contract with Passenger and Freight Business Units, and third party customers where profitable, for major maintenance, overhaul and other engineering services;
- development of best practice methods, systems, equipment and workshops for engineering work;
- management, training and development of staff;
- achievement of financial and other targets set by Rolling Stock Unit and approved by Board of SR.

The proposed organisation of the Rolling Stock Division is shown in the Annexes.

5.4.9 Corporate services unit

The Executive Board of SR - chaired by the Director General - will have overall responsibility for the performance of the Corporation and the co-ordination of the Business Units. The Board and its individual members as Directors of their respective Business Units will be assisted in their tasks by a Corporate Service Unit, which will also be headed by a member of the Board. This Unit will supply services that are more economic to provide centrally rather than be duplicated in each of the Business Units, or that are necessary for ensuring the unity of the Corporation.

We propose that the Corporate Services Unit will be responsible for

- Corporate Planning, which will draw together the plans of the Business Units, ensure that they are in harmony with overall SR objectives and with each other, and present the overall SR corporate plan. Included in this function are economic studies and forecasting
- computer systems, information technology and data network services
- finance and controlling, providing financial accounting, budgeting, treasury and funding services, monitoring of capital expenditure
- procurement which will set the purchasing procedures for all Business Units, and carry out purchasing of designated items
- real estate which will develop property and optimise use and financial return on SR properties
- development of the overall organisation structure of the Corporation
- international (bilateral and multilateral) relations including memberships of SR in international organisations, translating and interpreting functions
- human resources, setting overall SR policies and procedures on Human Resources, and providing central pay negotiations, training and other services
- legal services, ensuring compliance with all legal requirements and providing contract drafts
- internal audit, providing internal financial monitoring and ensuring the integrity of SR's systems and procedures
- press and public relations, which would include close liaison with press radio and television, and be the railway spokesperson on matters of public interest. Establishing corporate identity of the railway and the publishing information etc

The proposed structure for the Corporate Services Unit is shown in Annexes

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5.4.10 Ancillary services unit

It is recommended that all non –core ancillary services such as hospitals and schools be transferred out the railway to more appropriate Departments of Government. It is understood that this process is underway at present and the railway is to be commended for its initiative in this matter.

The railway was in the past described as a state within a state offering railway personnel and their families a variety of benefits and services. Where these services are being withdrawn they should be done with care and sensitivity.

Of course it will be necessary to make wage adjustments where appropriate and in this regard it is encouraging to see that SR are in the process of substantially increasing staff wages during the current year.

The opportunities for setting up the ancillary business will increase as time goes by and enterprises such as Tblisi Locomotive Factory, and Track Reconstruction should be considered for inclusion in this area of responsibility

5.5 Other services

5.5.1 Manager safety

Safety of operations is the first priority of any railway. It must be able to carry large numbers of passengers to their destinations safely. Despite any financial or competitive pressures safety cannot be compromised. For that reason and also to give the necessary high profile it is recommended that the position of Manager Safety should report directly to the Director General. The protection of the environment will become ever more important in the future and it is therefore proposed to include protection of the environment as part of Manager Safety responsibility.

5.5.2 Secretariat of Director General

We propose that the Head of DG's Secretariat - directly subordinate to the DG - will have the following main functions :

- Support the Director General in his co-ordinating activity within the Board
- Support the Director General when representing the Corporation outside
- Ensure smooth and effective functioning of the Board
- Co-ordinate the activities of the assistants and secretaries within the DG's Secretariat
- Advise the DG and the other members of the Board in matters of protocol

5.5.3 Regional and local level

General administrative levels as far as they exist on the regional and local level should be eliminated. Every Business Unit will decide about its own regional and local organisational needs (regional and local offices) and manage them directly.

A typical organisation for the maintenance of way for the local management is shown in the Annexes.

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5.6 Management relationships within SR

It is recommended to create a selling/buying relationship between the Business Units.
One of the main selling/buying relationships will be the one between the Freight and Passenger Business Units on one hand, and the Infrastructure Business Unit on the other. The latter will be responsible for a well functioning railway network, setting up train paths and selling them to the former, who will pay user fees on a tonne-km and train-km basis.

In the same way traction and passenger coach maintenance services will be negotiated between the Freight band Passenger services.

5.7 Implementation plan

The task of changing the organisation structure to the proposed new structure is a very significant one. The change must be carefully planned and will require the full commitment of the Director General and the other members of the Executive Board.

It is proposed to establish a Re-Structuring Task Force under the direction of the Director General, with responsibility for planning and co-ordinating the implementation of the new organisation structure. Each member of the Board will establish for his Business or Services Unit a Project Implementation Unit team, which will carry out the changes required, under the overall direction of the Re-Structuring Task Force.

We anticipate that the proposed changes can be substantially implemented within three years, although transition solutions might be necessary in some cases.

The members of the Re-Structuring Task Force should include representatives of each Business and Services Unit, assisted by an expert consultant facilitator respectively.

The objectives of the Re-Structuring Task Force would be to :

- develop a master plan for all the activities that must take place over the entire re-organisation implementation period
- issue guidelines to the Project Implementation Units in each Business and Services Unit
- co-ordinate and approve the plans of the Units' teams
- monitor and report to the Executive Board on progress. Amend plans as necessary
- assist the Unit Implementation teams in resolving difficulties that may arise, and in taking corrective measures to maintain the momentum of change

The Unit Implementation Teams should contain representatives from the main functional areas in the Unit. The Unit Director may chair the Team or delegate the chairmanship to a competent senior manager. In any case the Project Implementation Team will be responsible to the Unit Director, subject to the co-ordination of its work by the Re-Structuring Task Force.

The objectives of the Project Implementation Unit Teams will be to:

- develop detailed implementation plans for their individual Units
- ensure that the individual Unit plans are in harmony with the overall re-organisation plan and with each other
- submit plans for approval to the Re-Structuring Task Force and report on progress

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The relationships between the Re-Structuring Task force and Project Implementation Teams are shown in the Annexes.

5.8 Tendering procedures

As soon as SR acquires a proper chartered legal status, it should rapidly introduce tendering procedures in the field of procurement of products and services. Competition between providers within Georgia and/or foreign providers should be used to a maximum advantage of SR with the aim of reducing costs.

5.9 Outsourcing

SR's Board should be given the task to permanently take into consideration the possibility of purchasing services from third parties instead of producing them within SR. There should be no ideology playing any role in this respect, only thorough calculations undertaken case by case will show the financial advantages or not of outsourcing.

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6 LEGAL FRAMEWORK OF GEORGIA RAILWAYS

Examination of the legal framework and status of the Railway, its respective powers, obligations and responsibilities and its relationships to the Ministry of Transport and Communications and other Government agencies, including price control and anti-monopoly authorities was carried out by the legal expert, as his main task.

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7 REGULATOR

Reference has been made in the plan to the position of a Regulator. This person would have the responsibility of determining the level of Public Service Obligation in the light of monopoly operation of the railways.

This person would have also an obligation to ensure that the railway did not abuse their monopoly position. This position will decrease as competition is increased.

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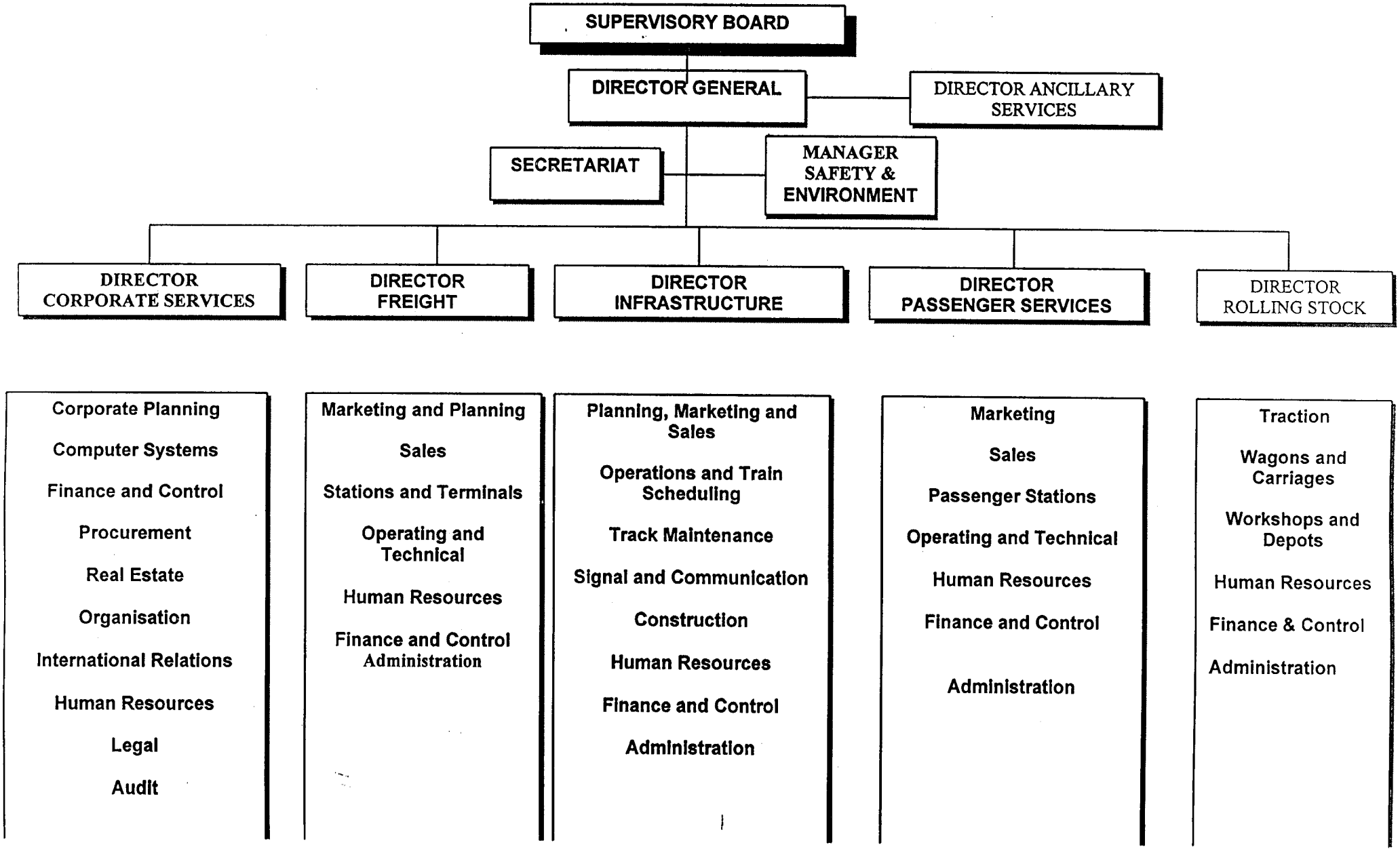
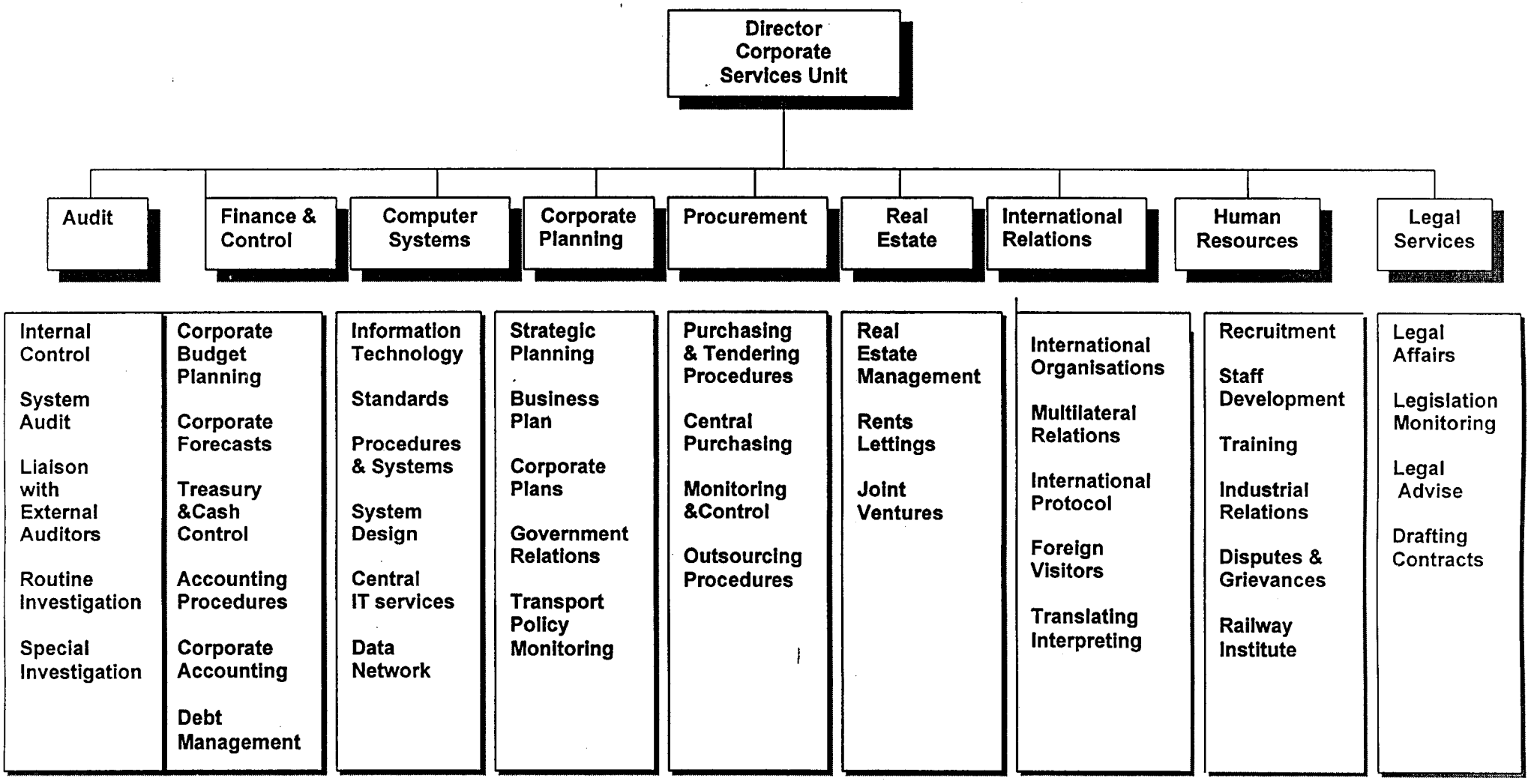
GEORGIAN RAILWAYS ORGANISATION CHART

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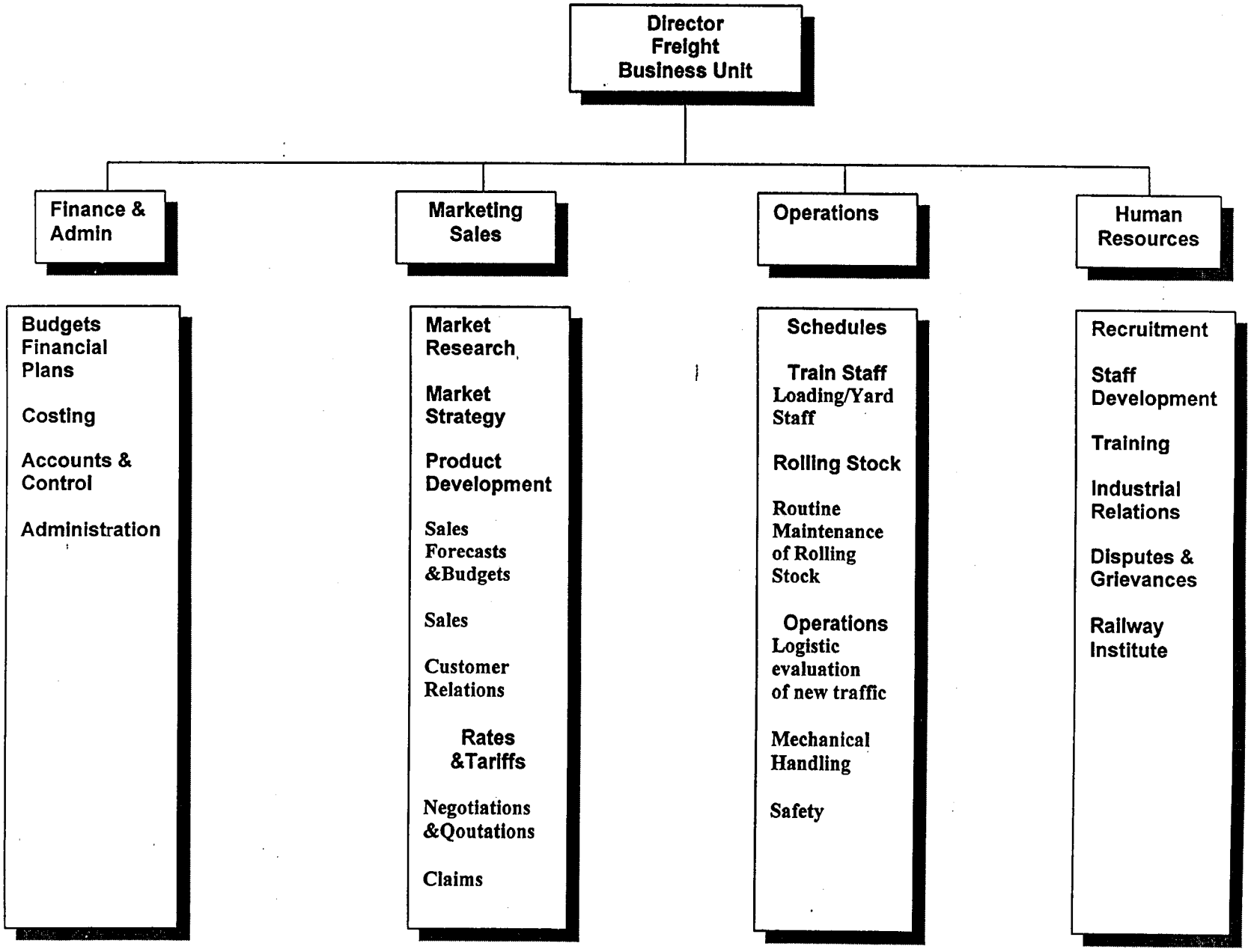
Audit
Finance & Control
Computer Systems
Corporate Planning
Procurement
Real Estate
International Relations
Human Resources
Legal Services
Internal Control
System Audit
Liaison with External Auditors
Routine Investigation
Special Investigation
Corporate Budget Planning
Corporate Forecasts
Treasury &Cash Control
Accounting Procedures
Corporate Accounting
Debt Management
Information Technology
Standards
Procedures & Systems
System Design
Central IT services
Data Network
Strategic Planning
Business Plan
Corporate Plans
Government Relations
Transport Policy Monitoring
Purchasing & Tendering Procedures
Central Purchasing
Monitoring &Control
Outsourcing Procedures
Real Estate Management
Rents Lettings
Joint Ventures
International Organisations
Multilateral Relations
International Protocol
Foreign Visitors
Translating Interpreting
Recruitment
Staff Development
Training
Industrial Relations
Disputes & Grievances
Railway Institute
Legal Affairs
Legislation Monitoring
Legal Advise
Drafting Contracts


Director
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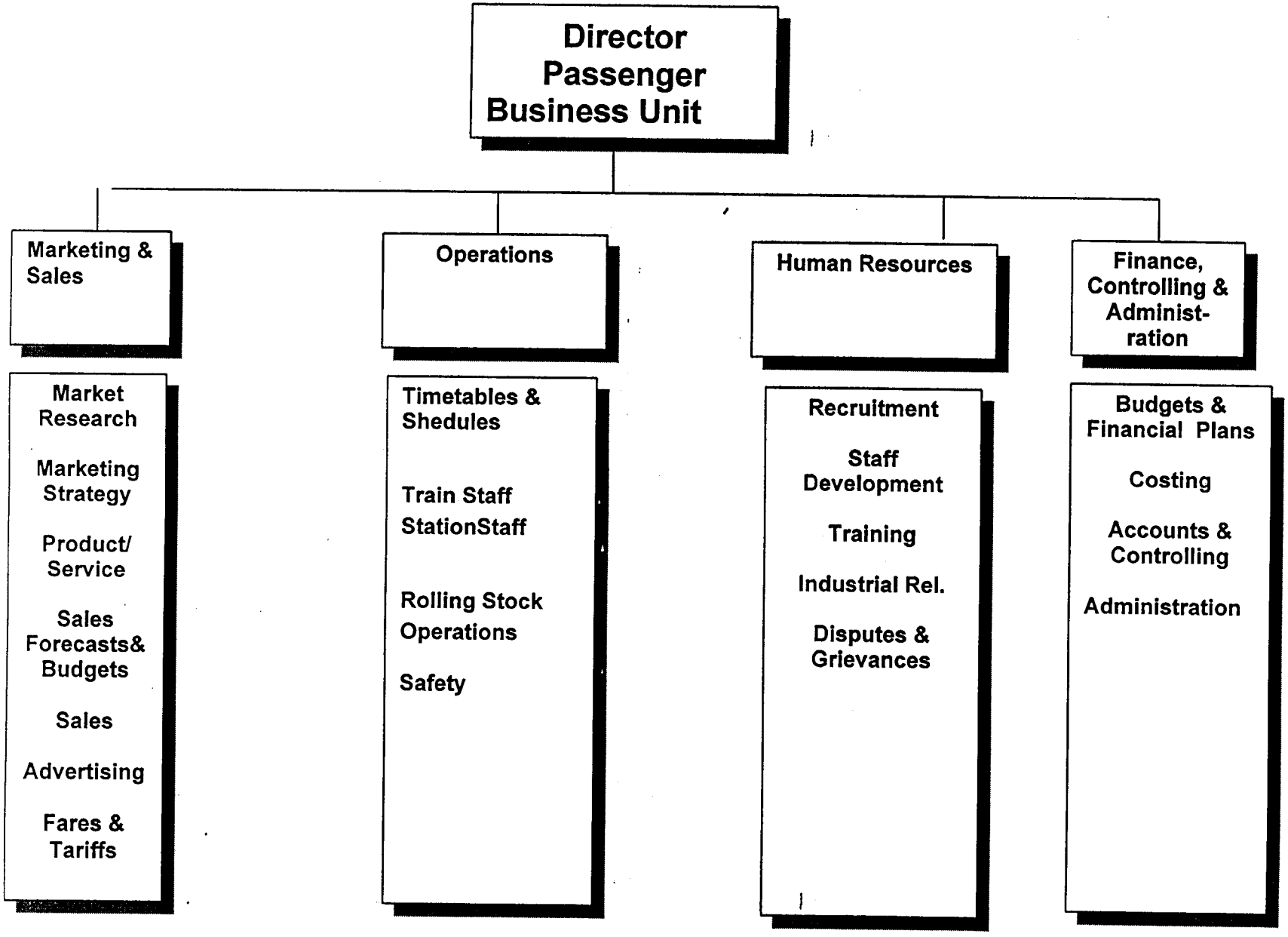
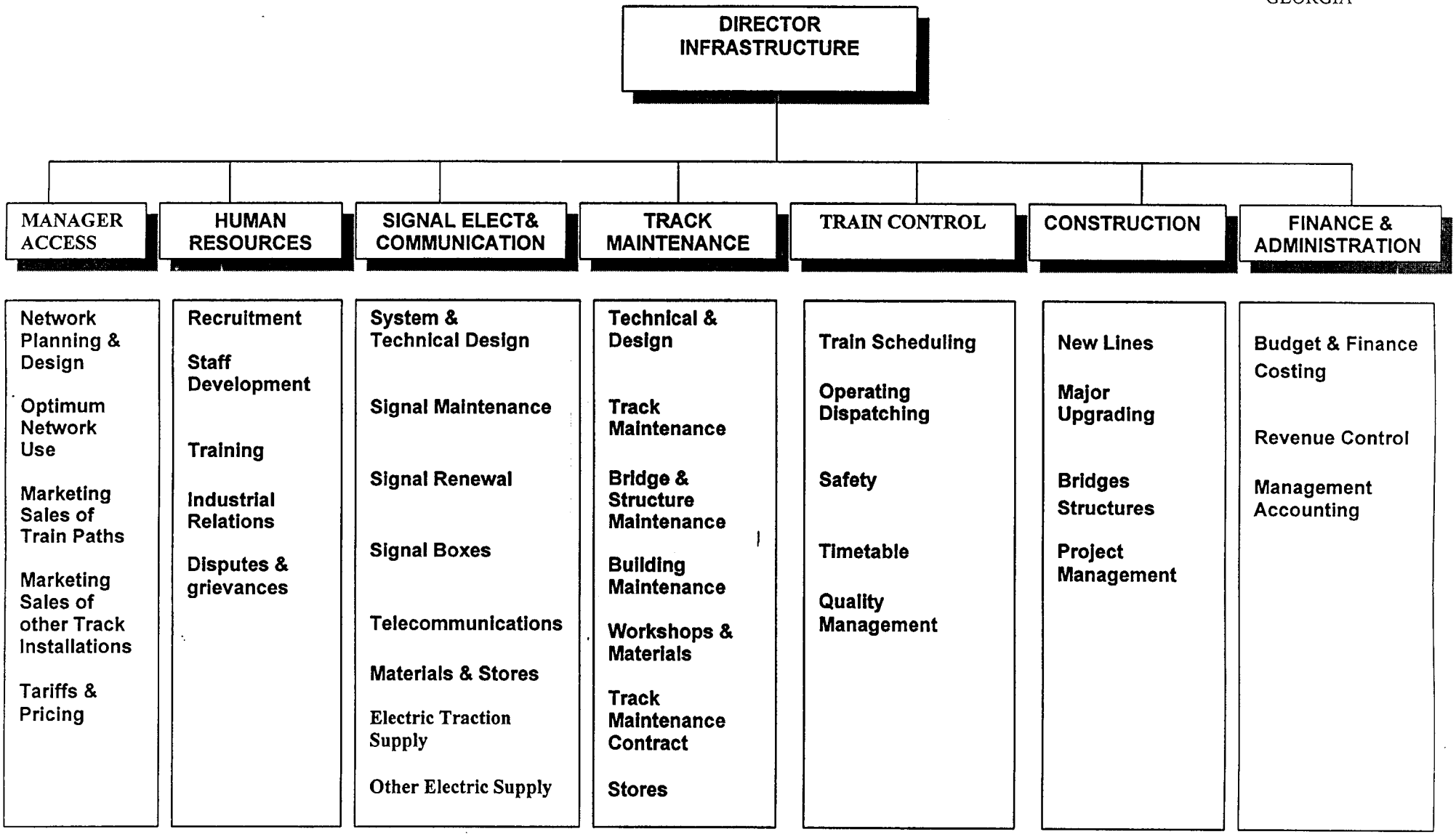
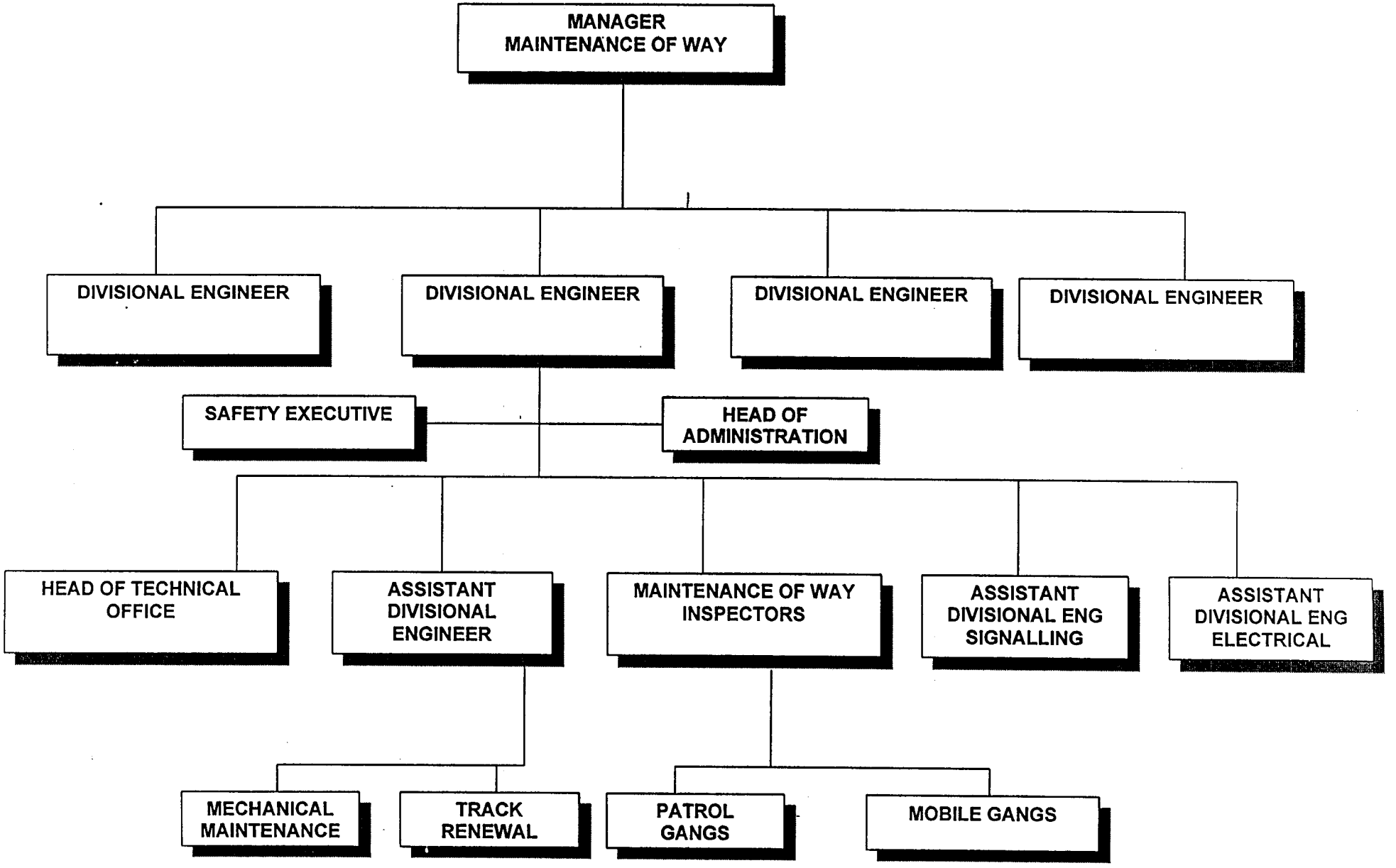
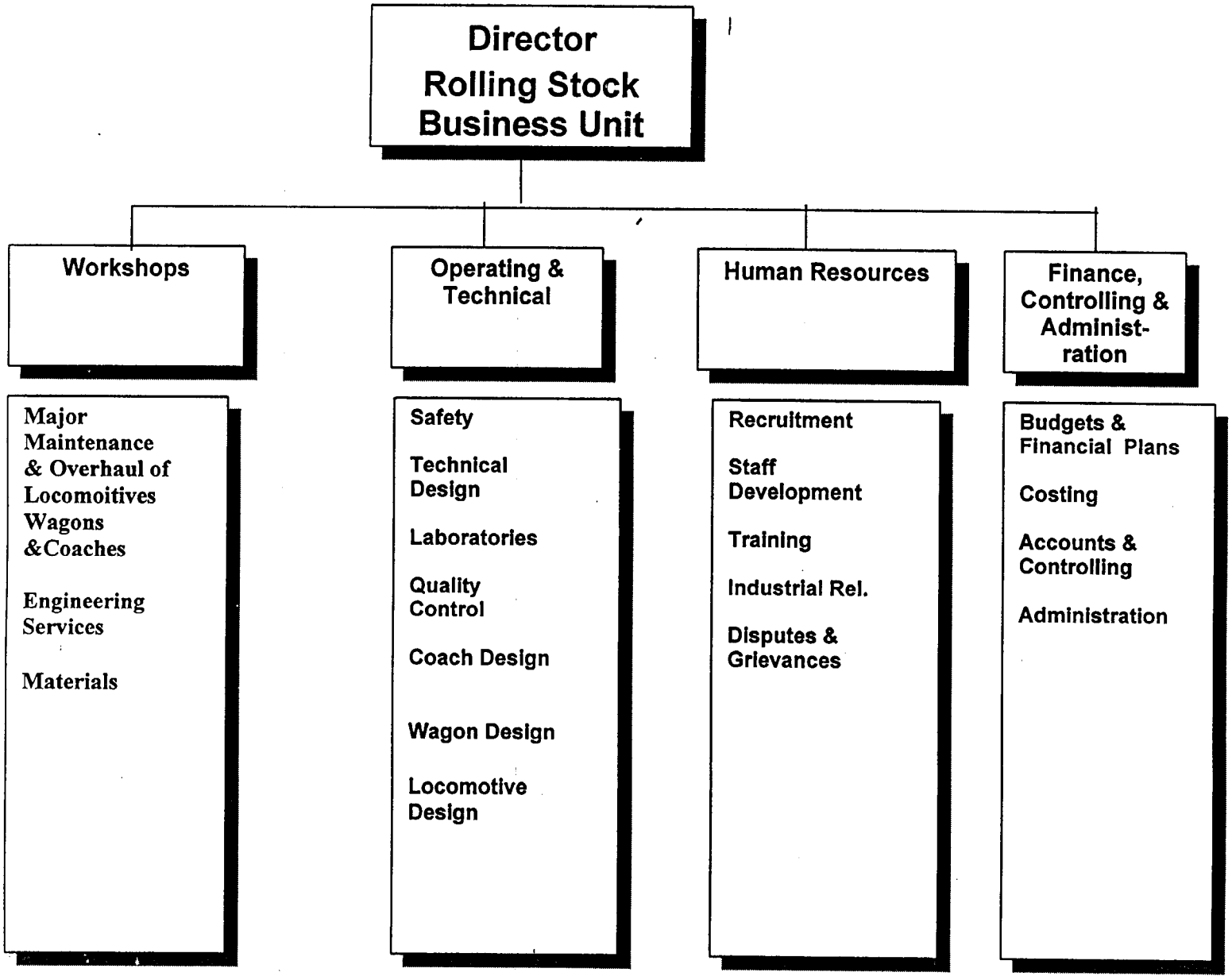
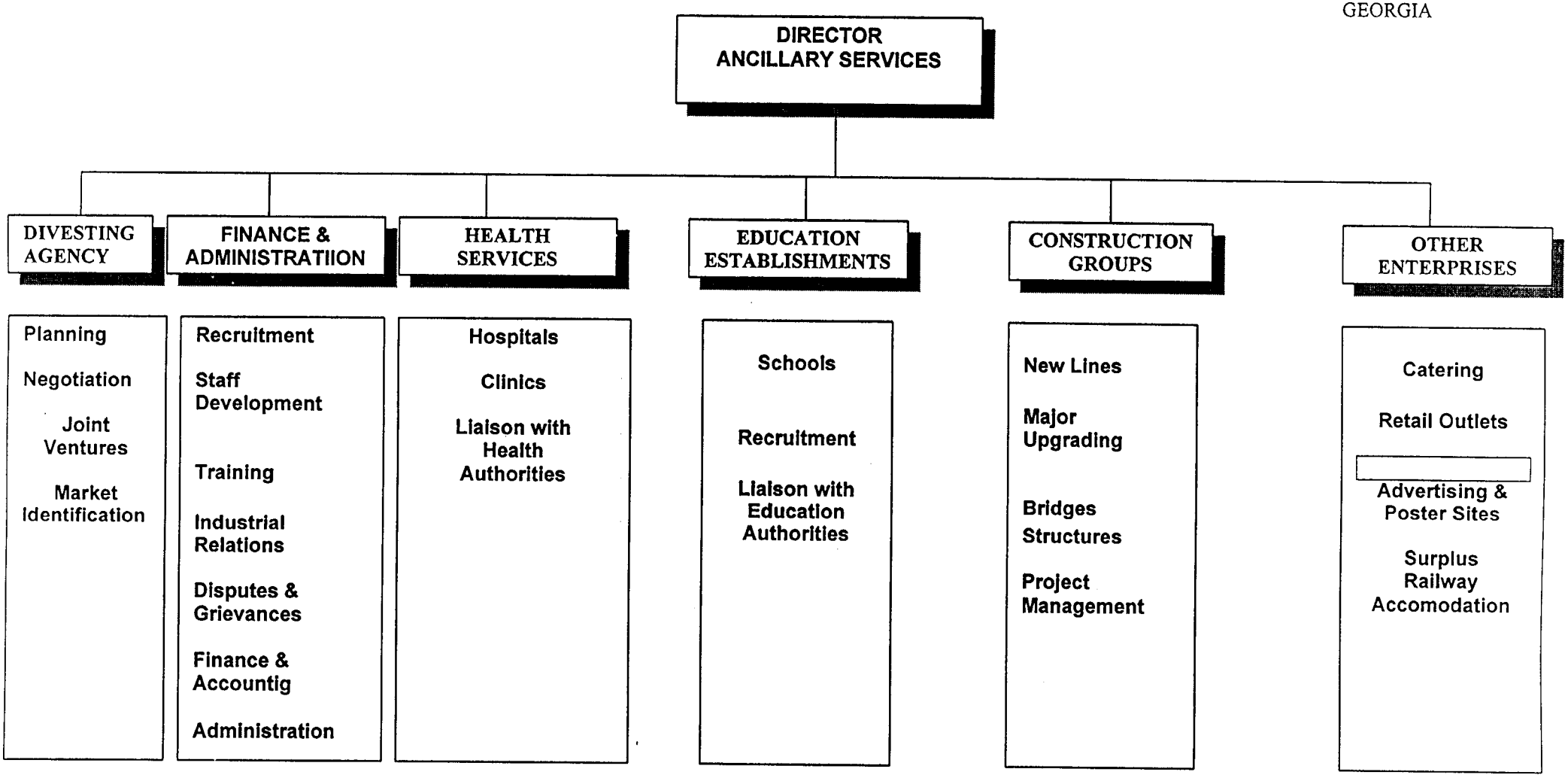
Business Unit
Finance &
Admin
Marketing
Sales
Operations
Human
Resources
Budgets
Financial
Plans
Costing
Accounts &
Control
Administration
Market
Research
Market
Strategy
Product
Development
Sales
Forecasts
&Budgets
Sales
Customer
Relations
Rates
&Tariffs
Negotiations
&Qoutations
Claims
Schedules
Train Staff
Loading/Yard
Staff
Rolling Stock
Routine
Maintenance
of Rolling
Stock
Operations
Logistic
evaluation
of new traffic
Mechanical
Handling
Safety
Recruitment
Staff
Development
Training
Industrial
Relations
Disputes &
Grievances
Railway
Institute


Director Passenger Business Unit
Marketing & Sales
Operations
Human Resources
Finance, Controlling & Administ-ration
Market Research
Marketing Strategy
Product/ Service
Sales Forecasts& Budgets
Sales
Advertising
Fares & Tariffs
Timetables & Shedules
Train Staff StationStaff
Rolling Stock Operations
Safety
Recruitment
Staff Development
Training
Industrial Rel.
Disputes & Grievances
Budgets & Financial Plans
Costing
Accounts & Controlling
Administration

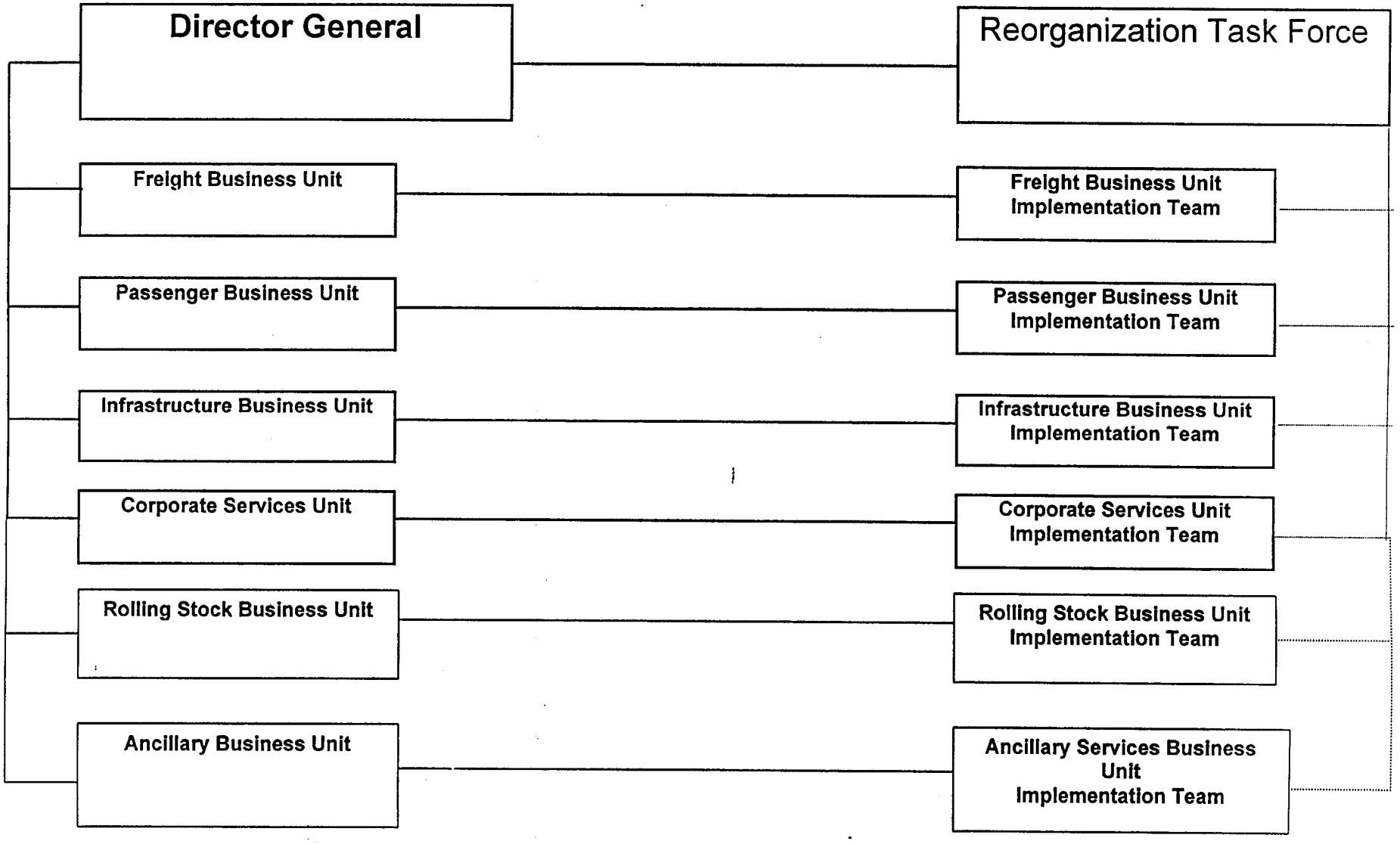

DIRECTOR INFRASTRUCTURE
MANAGER ACCESS
HUMAN RESOURCES
SIGNAL ELECT& COMMUNICATION
TRACK MAINTENANCE
TRAIN CONTROL
CONSTRUCTION
FINANCE & ADMINISTRATION
Network Planning & Design
Optimum Network Use
Marketing Sales of Train Paths
Marketing Sales of other Track Installations
Tariffs & Pricing
Recruitment
Staff Development
Training
Industrial Relations
Disputes & grievances
System & Technical Design
Signal Maintenance
Signal Renewal
Signal Boxes
Telecommunications
Materials & Stores
Electric Traction Supply
Other Electric Supply
Technical & Design
Track Maintenance
Bridge & Structure Maintenance
Building Maintenance
Workshops & Materials
Track Maintenance Contract
Stores
Train Scheduling
Operating Dispatching
Safety
Timetable
Quality Management
New Lines
Major Upgrading
Bridges Structures
Project Management
Budget & Finance Costing
Revenue Control
Management Accounting


MANAGER
MAINTENANCE OF WAY
DIVISIONAL ENGINEER
DIVISIONAL ENGINEER
DIVISIONAL ENGINEER
DIVISIONAL ENGINEER
SAFETY EXECUTIVE
HEAD OF
ADMINISTRATION
HEAD OF TECHNICAL
OFFICE
ASSISTANT
DIVISIONAL
ENGINEER
MAINTENANCE OF WAY
INSPECTORS
ASSISTANT
DIVISIONAL ENG
SIGNALLING
ASSISTANT
DIVISIONAL ENG
ELECTRICAL
MECHANICAL
MAINTENANCE
TRACK
RENEWAL
PATROL
GANGS
MOBILE GANGS


Director
Rolling Stock
Business Unit
Workshops
Operating & Technical
Human Resources
Finance, Controlling & Administ-ration
Major Maintenance & Overhaul of Locomoitives Wagons &Coaches
Engineering Services
Materials
Safety
Technical Design
Laboratories
Quality Control
Coach Design
Wagon Design
Locomotive Design
Recruitment
Staff Development
Training
Industrial Rel.
Disputes & Grievances
Budgets & Financial Plans
Costing
Accounts & Controlling
Administration


DIRECTOR
ANCILLARY SERVICES
DIVESTING AGENCY
FINANCE & ADMINISTRATIION
HEALTH SERVICES
EDUCATION ESTABLISHMENTS
CONSTRUCTION GROUPS
OTHER ENTERPRISES
Planning
Negotiation
Joint Ventures
Market Identification
Recruitment
Staff Development
Training
Industrial Relations
Disputes & Grievances
Finance & Accountig
Administration
Hospitals
Clinics
Liaison with Health Authorities
Schools
Recruitment
Liaison with Education Authorities
New Lines
Major Upgrading
Bridges
Structures
Project Management
Catering
Retail Outlets
Advertising & Poster Sites
Surplus Railway Accomodation

Re-Structuring Implementation Organisation



GEORGIAN RAILWAYS

HUMAN RESOURCES

GEORGIAN RAILWAYS
HUMAN RESOURCES

CONTENTS

1 HUMAN RESOURCES

1.1 Objectives

The objectives of the Human Resource strategy on Georgian Railways are to:

- Establish what Human Resource policies and procedures are in place, the extent to which they are followed, how they rate against best established practice and the need for any essential changes.
- Establish skill levels and determine training gaps within SR, particularly at Management and leadership levels. Make recommendations on Education, Training and Developmental interventions to bridge those gaps.
- Identify Training and Development activities to support the ongoing development of a Leadership culture.
- Examine and make recommendations on downsizing taking into account the facts, impacts and cultural context both within SR and within Georgia as a whole. The 'cultural context' in SR will take into consideration the management style and the role of the trade union. The 'facts' within Georgia will identify the realities of the Social Safety Net and the degree to which this will help or hinder the potential success and pace of a downsizing programme.
- Identify the key issues in implementing a change programme and make recommendations to deal effectively with them.
- Review the internal communications and consultative mechanisms and where necessary make recommendations designed to ensure best practice in communicating information on business performance and on the process of change. Emphasise that all communication places the business imperative as the prime determinant in future decision taking.
- Evaluate the existing computerised Personnel information system (CPIS).
- Support the overall project regarding Human Resource matters and ensure that the capability and gearing of the organisation, from a Human Resource viewpoint, is fully considered in developing business plans for the future.
- Implement the recommendations herein during year 1 of the business plan.

In seeking to achieve these objectives there is a recognition that there must be a balance between the urgent need to change and the retention of the positive aspects of SR, particularly the operational and technical skills, morale and commitment of the employees. It is also fundamental to be fully aware of the social situation in Georgia.

There is high unemployment and while the Social Safety Net has been revised positively it is still inadequate to overcome the issues posed by overstaffing and the use of a western style severance programme as part of a downsizing initiative. There is no doubt that while the staff of SR, with whom the consultant met, have a full commitment to the need for change, they are also informed by a strong social conscience.

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1.2 Current situation

1.2.1 Structures and staffing

SR is headed by a Chairman, with five Deputies reporting directly to him. In addition 17 departments or sections bypass the 'Deputy' structure and also report directly to the Chairman.

This unwieldy structure, while allowing for direct two way communication between the Chairman and a wide range of managers, is patently inefficient and does not indicate a high level of use of, or indeed trust in, the concept or process of delegation.

1.2.2 Staffing

This structure which is detailed below, and the staff numbers shown, are as presented by the Human Resources Department. The numbers are the 'Actual' position at the end of Quarter 2 1998. 'Actual' is used to distinguish from Plan or budgeted staffing for each department.

Staff numbers of Georgian railways department at end Q2 1998

	PLAN	ACTUAL
MAIN BUSINESS		
Railway department administration	504.5	507.0
Local management	137.5	137.5
Rehabilitation trains	120.0	109.0
Freight service	2211.0	2130.0
Locomotive service	2200.0	2189.0
Wagon service	1869.0	1884.0
Passenger service	1524.0	1513.0
Power supply service	1576.0	1408.0
Signalling and communication	1181.0	1009.0
Railway track service	3597.0	3487.0
Commercial service	11.0	10.0
Container service	71.0	92.0
Technical supply provision	148.0	138.0
Building service	871.0	811.0
Computer centre	126.0	120.0
Fire service	160.0	154.0
TOTAL MAIN BUSINESS	**16307.0**	**15698.0**
RAILWAY ENTERPRISES		
Gori sleeper factory	36.0	35.0
Reinforced concrete factory	95.0	95.0
Rail welding train	107.0	107.0
Chkhenishi ballast factory	55.0	51.0
Durnuki ballast factory	37.0	35.0
Tbilisi locomotive factory	1366.0	1394.0
Loco and wagon repair factory	1200.0	659.0
Road construction	540.0	540.0
Railway design institute	40.0	37.0

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TOTAL RAILWAY ENTERPRISES	**3476.0**	**2953.0**
OTHER ACTIVITIES		
Training centre	52.0	44.0
Kindergarten	373.0	349.0
Children's railway	12.0	12.0
Medical service	3447.0	3447.0
Lease service	7.0	7.0
Samtredia supplementary service	25.0	25.0
TOTAL OTHER ACTIVITIES	**3916.0**	**3884.0**
TOTAL EMPLOYEES	**23699.0**	**22535.0**

Notes:

For the purposes of this section the structure used by HR and confirmed by them as current is used. The use of differing organisation charts within SR at this stage is not, in itself, a problem. It may, however, indicate differences, even if only in interpretation, which would not be helpful in establishing an agreed base as the change process moves forward. Such an agreed base is essential to establishing the credibility that is fundamental to the acceptance of the change message that management will be communicating to the employees. There will be sufficient divergence of opinion within the workforce on what needs to happen within the company. Management failing to agree on such basics will not be helpful in establishing credibility.

The staffing levels shown do not match exactly figures sourced by others directly from the Departments concerned. Differences may be explained by issues of employee status, or timing of the compilation, these not being uncommon causes of difference in most organisations.

Full agreement on staff numbers will be vital to the development of consistent Human resource policy and procedure and for the development and maintenance of an on-line Human Resource data base. It is also highly important in the short term when Strategies are being developed for the dissemination of the Company's mission, objectives and change program.

1.2.3 Staff reduction

It could have been expected that the enormous decline in traffic would be reflected in a reduction in total employment as the general directive of the Government and the will of SR is to reduce staff levels where possible. Additionally, there is no Government directive to retain unneeded staff for social reasons.

It must also be borne in mind that there have been continuing efforts to concentrate work through case by case examination when employees retire, resign or are terminated.

The application of a general policy of reduction is a sensitive matter and there was concern expressed that a blunt approach, a dramatic policy of staff reduction could lead to the loss, and a resultant shortage, of key specialists. These specialists were commented on as core to the future of the railway.

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This view has some validity as the retention of specialist staff could also be an important consideration for many of the recommendations emanating from the project as a whole. It is therefore essential that objective criteria, based on the business imperative, are used to determine future staffing levels. The alternative may be a mix of emotion and tradition and is unacceptable.

The application of a non replacement policy does not appear to be in conflict with the principles outlined in the Company Union Collective Agreement, particularly the principles of non-compulsory severance and a commitment to retraining.

1.2.4 Retirement

Normal retirement age for men is 60, for women 55.

For particular categories this is reduced to 55 for men and 50 for women.

However, employees scheduled to retire may opt not to do so and can remain in employment indefinitely, subject only to a job related medical examination. In administration, this has the effect of retaining experience and skills but it also cuts off promotion opportunities for younger staff many of whom have the skills required to deal with information technology and the attitudes required to sustain the difficult change process faced by SR. The motivation of younger staff must be affected by the continued existence of this rule.

1.2.5 Redundancy

While there is an understanding of the concept of job redundancy and an acceptance that it is inevitable as the economy reforms there is no formal provision for redundancy payments.

There is, however a widespread acceptance of the concept of short-term layoffs. This is built into the Collective Agreement, the main condition being a commitment to recruit from such employees in the event of future vacancies arising.

1.2.6 Further analysis

It is essential to recommendations on Human Resources that further, detailed, analysis is carried out. The lack of a comprehensive on-line data base is a major difficulty. For example, detailed analysis of employees by category, skill-set or age distribution was not possible as part of this study.

1.3 Human Resources Function

The Human Resources Function in SR is represented at senior functional level (i.e. below the 'deputy' level), but the head of HR reports directly to the Chairman. This is not unusual as, in the current structure, 17 departments report directly to the Chairman in addition to the five deputies

The main function of the HR department is to apply agreements and procedures already in existence and to negotiate changes or improvements.

They have played a key role in negotiating the 1998 Collective Agreement, the Disciplinary Procedure for railway workers and the Operations Code for the railway. The first two have been legally registered and the third is with the Department of Transport prior to being submitted to the Department of Justice. On publication these will become the rules for all behaviour and activity. All of these agreements and codes are strictly enforced by all parties.

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There is no apparent current role for HR in the development of strategies for the future other than to develop clear rules for all eventualities. This strategy is understandable in the present state of development of culture but is not conducive to change. The current 'freeze' approach, particularly the legal registration of all agreements and codes will need to be superseded by an 'unfreezing' if the thinking styles are to be challenged. Dealing with the unknown in a creative way does not appear to be the norm. Again this is understandable given the need to re-establish the very basics of running a railway that has been the priority since the difficulties of recent years.

Payment of wages is not a HR function. In line with most western companies the disbursement of monies is a financial responsibility.

The HR department is responsible for:

- The smooth running of industrial relations procedures including the legally registered disciplinary procedure
- Assisting and advising on negotiations leading to the company union collective agreement and other regulations and procedures.
- Recruitment and selection procedures.
- Maintaining the succession planning listings on which selection for promotion is based.
- Liaison with and advising local HR officers.
- Auditing distributed HR functions offices to ensure procedural compliance.
- Social services.
- The training centre.
- Recording of all staff information submitted by local hr departments on a monthly basis.
- Auditing of local hr departments to ensure procedural compliance, mainly in relation to recruitment, selection and industrial relations matters.

There is no training function as understood in western organisations and there is no strategy or
programme of management development.

There are no training guidelines or programmes.

Some limited use has been made of the Management High School at the Technical University for computer skills training but for little else.

The HR Manager appears well educated and knowledgeable on HR matters and carries a wide brief. He plays an active role in industrial relations.

Local HR functions exist in all the major depots, stations and at regional level in operations. Those encountered were, in the main, engineers or technicians and had trade union experience. In this sense they are similar to many Personnel Managers in the UK and Ireland in the 1960s and '70s as the profession evolved and prior to the development and spread of professional HR education.

This year the department obtained a computerised personnel management information system (CPIS). This is Windows based and western developed and has been translated into Georgian. It is actively used but this use is very limited for two reasons. Firstly the difficulty of entering and verifying all information manually. In developing a CPIS many organisations make inroads by downloading information from existing systems. The absence of such systems means this is not an option in SR. To date, information on 7,000 staff has been entered onto the system. Loading the balance of information will be labour intensive and very time consuming.

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The second problem will be the updating of information. Outside the main depots, stations and offices the system is not on-line. Even where computers are on-line locally, access by the local HR department is not a short term option. Currently manpower and HR reports are generated manually at local level and sent monthly to central HR for recording. This method will result in the CPIS being continuously out of date and ineffective for fast accurate responses to enquiries.

1.4 Education and Training

1.4.1 General

Normal schooling in Georgia is from 6 to 17 years of age and is still based largely on the FSU system where Kindergarten is followed by Lycee. At 15 years of age, students can choose to attend a Teknikum (Technical school) to pursue more vocationally based education. Following two to three years at a Teknikum they graduate as skilled workers. The majority of students continue their general academic education to 17 years of age.

Until 97/98 SR had it's own Kindergartens, Lycees and Teknikum. The Lycee system has now been transferred to the Education system proper and the Kindergartens are also planned for transfer in the near future. The Teknikum has been restructured and is now a Training Centre.

Unlike railways in many FSU countries, SR does not have it's own Railway Institute. There is, however, a Railway Department at the Transport Faculty, Georgian Technical University.

Professional or 'Specialist' staff in the railway will normally have progressed through third level.

Education at all levels is free but budgetary constraints in recent years have reduced government spending. There has been a growth in private education and this will have a growing significance in the future in terms of business education.

While English is taught more extensively in school than heretofore there is little evidence of it's presence or use within SR. All of the third level Institutions, both public and private, with which discussions were held, regarded fluency in a European language (preferably English, but also German and French) as an essential prerequisite to their provision of effective Business Education and Management Development.

1.5 Technical Education

To date most initial training has taken place in the Teknikum attached to the railway or in the Railway Department at the Transport Faculty in The Georgian Technical University.

The Training Centre

The Teknikum is now referred to as the Railway Education Centre or The Training Centre. Throughout this report the latter title is used. It was founded at the same time as the Railway, some 120 years ago. Until 1959 it was known as the Tbilisi Transport Engineering Institute. It subsequently became a Teknikum within the normal education system. Over the last few years the role of the Centre has changed from a second level vocational institution to a retraining centre for existing staff. However it is seriously lacking in up-to-date equipment and facilities. For example, course are run for SR staff on computerisation. However, the equipment available, while well maintained and cared for is not adequate. It may be useful in teaching keyboard skills, but is not relevant for modern computer applications.

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Where training is taking place, both day and evening courses are run making maximum use if the facilities that do exist.

In former times all graduates of this school were automatically employed by the Railway. Now, the numbers have reduced and selection is based on results. There is still a belief among some connected to the centre that it's former role can return in full.

Retraining of employees is expensive and current budgetary restraints are impacting the training budget as much as any other.

There is no evidence of any formal training needs analysis being carried out.

The Railway Faculty

This is officially the Railway Construction and Track Service of the Transport Department, Georgian Technical University (GTU).

Traditionally, graduates of programmes in the Railway faculty were recruited directly into SR. Many do not now follow that route, as vacancies are not guaranteed and many graduates choose to follow other careers, particularly those with better pay.

The faculty does not have the necessary equipment to train in the required new methods. They are still using FSU General Operating Standards. Discussion and observation generally suggested little acceptance of new ideas. The facilities and equipment in the faculty are not of an adequate standard for future development of engineers or technicians for SR.

To rectify this situation the faculty have developed a project to set up the computer design of railways, diagnostics of tracks and the setting up of a calculation laboratory. The desired outcomes include

- increasing education levels in line with modern requirements and the Tacis programme (see below)
- increasing, through computerisation, the level of scientific research output with a view to introducing them into operations
- creating, selecting and recommending new equipment and technologies for introduction into operations
- improving and developing diagnostic methods for track measurement to improve track condition and reduce labour and other costs.

The project set up would take one year and would require 5 PCs, peripherals, a plotter, an Oscillograph for track measurement and some supporting office equipment.

Taken in tandem with the Tacis programme, this is a project worth serious consideration.

Georgian Technical University (GTU)

There is currently a Tacis programme in train, in conjunction with Universities in Limerick, Manchester and Athens. This is aimed at GTU as a whole, not the Transport faculty. The wider objective is to promote a modern engineering environment which will provide the graduate skills required to support the Georgian Economy.

The specific project objective is to reconstruct the engineering curriculum and to make it relevant to the needs of industry. As well as curriculum redesign, there is a strong focus on commercial and business education built into the project.

In the longer term the achievement of these objectives will, undoubtedly help SR. In the short term it is important that the real training and education needs of SR are identified and the Railway faculty responds to those needs.

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1.5.1 Management development

Business education does not happen to the same extent as in other countries and there is a resultant lack of exposure to the theory of modern business management. The very low levels of knowledge of English is a major hurdle to studying Business as a subject. There is also the question of cost. Where such business education does exist in Georgia it is expensive by local standards.

The following providers of Management Education and Training have been identified within Georgia. All are based in Tbilisi.

State Management and Business College

This is part of the Georgian Technical University. It is also called the Management High School and was set up during 1995 to 1998 as a part of the GTU PACT (Public Administration College of Tbilisi) programme. This was EU funded under Tacis and some 2000 government and state employees underwent training over the period.

While originally focussed on training of civil servants the college is now open to the public and is keen to focus more on business education and training for all. It runs a six week general course as well a wide range of specialist short courses in management including general management, marketing, personnel management, law, statistics, finance and information systems. English language training is also available. Courses are available day and evening.

Links have been established with Georgia State University in the US. In the longer term the college sees the establishment of a Caucasus school of business administration as a logical progression and a step in which they would play a lead role.

Tbilisi Business School

This is a private, Georgian owned, management education college. It offers a wide range of course for training and retraining managers in all management subjects. There are direct links with London Business School, Cranfield (both UK), Bryant College, Davis University (both US) and a number of German Colleges. There are student placement and visiting lecturer arrangements with all of these. There are extensive, modern computer and language laboratories and there are plans to commence an MBA in March 1999. This will be accredited by London Business School and tuition on this course will be through English. The Business studies degree starts in the Georgian language but by year three students are expected to be proficient in a European language (English, German, French) and able to continue in that language.

The school has recently been requested by the Government to provide a programme of local authority training and it has experience of tailoring courses to specific company needs.
As a private school, funding is an issue and without grant aid, fees are expensive by local standards.

CERMA

The Centre for Enterprise Restructuring and Management Assistance (CERMA) is currently involved in developing a major programme targeted on the rehabilitation of privatised and commercialised enterprises. Over a five year period World Bank and Georgian Government funding will enable the training of some 400 managers in management skills. A three phase programme, the first phase lasts six to eight months and deals with basic management skills including computers, finance, marketing, accounting, business law and micro and macro economics. For each year of the programme a total of 10 groups totalling 80 to 100 managers will go through phase 1.

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Smaller groups will be selected from these participants for phase 2 which will involve two to three month placements in same-profile, successful, enterprises, mainly in eastern Europe. The location is designed to ensure more relevant experiences than the more common placing of people in highly developed enterprises and colleges in western societies. In the latter cases the skill and knowledge transfer to local Georgian industry is not as successful.

Phase three will complete the programme and involves a small number of managers going to Western Europe, the US and South East Asia.

The facilities will involve the establishment of a multimedia centre. The experience of a similar programme in Moldova has resulted in 18 multimedia centres throughout that country.

Fees payable by enterprises are heavily subsidised and are suggested at about 10% of the full cost.

Language Training.

The British Council promote English language training. They do not themselves run any courses, presently approving a small number of providers and providing facilities for the 'Cambridge' group of examinations. They have an extensive and up to date library and information service. Currently they are examining a more proactive approach to provision of language training and by the end of 1998 hope to have up to ten corporate clients, many of them multinationals.

They also act as an exam centre for Distance learning and correspondence courses for Accounting, Medical bodies.

All of the management training and education bodies mentioned above have extensive modern language training facilities.

'Know-how' programmes

There are a number of experiential 'know how' programmes, where middle and senior managers are given the opportunity to gain management development and also to work in companies abroad which are closely allied to their own industry. The most widely known is the Joint Industrial and Commercial Attachments Programme (JICAP) which helps to promote management change and improvements in Georgian companies. JICAP offers four to five week management training including induction and a three week work attachment in a British company. Candidates need to be 25 - 45 year old managers, graduates or equivalent with good English. They must work in a commercial company and my understanding is that the commercial focus in SR would lead to favourable consideration, as opposed to working in the Railway 'Department' which could suggest working in a government department, a category of employment excluded under the programme. Current focus of the programme includes Transport. There are also similar schemes run in conjunction with the French and German authorities. Further information on JICAP can be had from the British Council.

Distance learning

There is no evidence of the active promotion of Distance learning in Georgia. Participants apply to overseas providers as individuals. The British Council provides a base for examinations and the fact that materials are mostly in English means that they are a focal point for those who are studying. Accountancy and Medical/Pharmaceutical studies are the main courses and there is some evidence of participation in the (UK) Open University. The (UK) Open Business School is not evident. Most of these Distance programmes are long term in nature. They are also very expensive and would require substantial subsidy for any potential participants. Nevertheless, they should be encouraged.

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HR education

It is essential that professional Occupational Psychology and Human Resource education is available for the future development of SR. All of the Business Schools mentioned above provide basic education in aspects of HR work. The most advance appeared to be Tbilisi Business School.

Flexibility and movement

Recruitment and Selection

Recruitment is only into base entry jobs - labouring, clerical, first level technical and engineering. This is mainly through the training centre (formerly the Teknikum) and the Railway faculty of GTU. Graduates of these institutions are currently guaranteed jobs in the railway although many are apparently opting out and are pursuing careers elsewhere.

All jobs are graded according to a nomenclature which lists the qualifications required. These are specific formal qualifications rather than competencies. Over the ensuing years staff are rostered through different departments and trained in specific skills. Mostly this training is on the job although locomotive drivers are put through the driver training school at Tbilisi locomotive depot. When staff pass relevant exams they are qualified to move to the next level. Based on experience and length of service staff are short-listed for vacancies at the next level. At operating level and for manual and skilled jobs, selection is dealt with at local level. The commission or panel will be formal and will include the local manager, the HR representative, the trade union representative and whatever local manager has ultimate responsibility for the job. Factors such as performance, reliability and discipline are taken into account. Jobs are not advertised as it is felt not to be necessary. This is the opposite to the open competition approach of many organisations in the west but is in line with the thinking of most progressive organisations where management decide who is qualified for consideration for any job. There is scope for abuse of the system where qualified candidates could be excluded for extraneous reasons. There is no evidence that this, in fact, happens and the procedure should not be changed. It does need to continue to be controlled and audited to endure objectivity and fairness.

Succession Planning

At middle manager level access is based on management identifying staff with potential and planning a rostering programme for them. They will already be qualified by examination for the next level as per the nomenclature or will need to become qualified prior to being shortlisted.

This is a form of succession planning and a computerised approach has been taken. For all jobs at senior and middle management level one, two or three successors have been identified. Some 200 jobs are involved and the whole database covers some 700 staff.

A second database of 'young professionals' also exists listing technically qualified staff under 35 and identifying them as the base pool for the future.

The succession planning system and the selection process will become more complex as the range of management and functional skills broadens. The introduction of competencies and behaviours, many of which are not 'examinable', will further complicate the process. The concept of psychometric testing is not recognised and may be seriously resisted within Georgian culture. Interestingly, such concepts as well as performance management, team learning and so on have been successfully introduced within the private sector, in the oil industry and in the financial sector. These have been led by expatriate management and, in the main are in the early stages of development.

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A skills inventory is an integral part of the succession planning system. This will be very useful in the identification of staff for transfer and relocation as part of a downsizing exercise. However it will need to be further developed beyond the current narrow focus on qualifications if the system is to play a full role in decision making on staff movement.

1.5.2 Job value

The source for determining Job Value is the 'National Job Coding System' which lists all jobs along with the qualifications required to attain that level. No opportunity was available to examine this book in sufficient detail but it appeared to be similar to DOT, CODOT and other systems used in USA, UK and France.

Trade Unions and consultation

There is one trade union within SR, The Independent Trade Union of Railwaymen and Transport Builders. While the Law of Georgia on Trade Unions protects the voluntary nature of Union membership, membership of the Union in SR is claimed, by the Union, to be universal.

The relationship between the railway management and the Trade Union is defined in the Collective Agreement for 1998-1999 due to be renegotiated and replaced by a new Agreement from Q1 2000. This is approved by the Ministry of Social Protection, Labour and Employment and is legally registered.

They play an active role in the day to day running of the business. For example, they sit on all 'commissions' deciding on promotional appointments.

The Union has extensive offices in head office of SR.

They claim to be the most important and most progressive union in Georgia.

The General Provisions of the collective agreement are normal by Western standards with, for example:

Change only through mutual consent.

A disputes procedure followed by arbitration aspect that refers lack of agreement to the Law on Trade Unions and the Law on Collective Agreements.

The introduction of changes and additions, including a joint meetings process between the management and the Union Presidium.

Commitment to enter negotiations on change

Recognition of the Agreement as the basis for defining and regulating the mutual obligations of the parties.

The Agreement refers to the options which must be pursued in the event of a reduction of activity in the Railway company. Severance is to be mainly voluntary and there is a commitment to explore a whole range of options before employment would be permanently terminated.

This section is far more thorough than in the west and, while recognising the realities inherent in a change process, it reflects the lack of a redundancy process, the high levels of unemployment, and the relatively highly levels of pay and benefits of railway employment.

The commitment to safety education and training are laudable and support the professional standards that are throughout the document. However the commitments to culture, etc. are not wholly aligned with the need to become a more commercially focussed organisation.

To understand fully the role of the Trade Union within SR it is necessary to study:

- the Collective Agreement,
- the Law of Georgia on Trade Unions,
- the law of Georgia on Collective Agreements and
- the, legally registered, Regulations on Discipline of Railway Transport Workers.

The Future - analysis and recommendations

Restructuring and corporate recovery

All of the conclusions and recommendations within the HR Report are based on the need for radical restructuring of SR into Strategic Business Units as detailed in the Institutional Report.

Without the full commitment to implementation of the necessary restructuring, the success of the change process will be seriously undermined.

The restructuring of SR particularly into Strategic Business Units will be a complex and difficult task. This complexity and difficulty will be dramatically increased if it is carried out at the same time as a major reduction in staffing levels.

An in-depth assessment of competencies is required particularly at management/leadership level. This will allow for the fact that many of the employees, even at Management level, have not been exposed to broad Management development.

The Jobs classification system, currently in use, has been a very worthwhile and effective system. However it is restrictive in the context of future development and there needs to be a broadening of the analysis of each job and the introduction of the concept of competencies as best practice.

Consideration should be given to the use of diagnostic tools and feedback sessions particularly for managers. A difficulty in doing this is the lack of knowledge of English, many of the better tools in this field having been developed in the UK and US.

It is recommended that detailed plans for staff reductions, showing clear time lines, are developed. These:

- must be aligned with investment plans and
- must also take account of short term peaks where additional development, training and parallel activity is required.

The transition will require detailed Job Design process resulting in role descriptions for all jobs. These should be accompanied by person specifications, using competencies for management and specialist jobs. The existing Skills Inventory in use in the railway needs to be expanded for all key staff using the competency concept. This will enable a more effective allocation of staff and a more effective and focussed programme of retraining where this is necessary.

Management of the change process

The planning, facilitation and management of a change process is difficult in ordinary circumstances. This change initiative is further complicated by

- a lack of experience at leadership level and at employee level of driving change

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- serious budgetary considerations in terms of the speedy investment required in the railway and
- in technology
- similar budgetary constraints in installing supported severance arrangements to achieve
- downsizing targets
- a lack of fluency in the English language, restricting access to much of the literature and case
- material on change management
- the lack of a full on-line data base on the human resource

It is essential that those who are taking ownership of the process be fully supported in all of these areas.

Additionally they need the ongoing support of change teams to research, facilitate, plan and monitor the process prior to launch, and on an ongoing basis, as implementation takes place.

It is recommended that senior Management to be guided through the development of a comprehensive strategic plan to deal with all aspects of the change process.

Change teams.

Teams need to be established to support the change process. The core team must report directly to the CEO and must be established and functioning effectively at the Strategy Formulation and objective setting stage. The establishment of further teams to support each of the Directors must then follow to ensure that the change process maintains momentum and critical direction.

These teams will report to the senior managers who are leading the change implementation and will focus more on the achievement and monitoring of objectives and the tactical elements of the process. The individual team members must be carefully selected and, while Specialist knowledge of the railway must be within the teams expertise, the individuals must be selected more on their possession of the relevant competencies (Leadership, Energy, Independence of thinking etc.) Change teams need to be described, with Job profiles and Person Specifications for each role, with the specifications using competencies to describe the key attributes required.

At a time of staff reduction there must be maximum sensitivity to the recruitment of new staff. This must be kept to the minimum necessary and should only occur where the skills are urgently required, and where the lead-time for acquiring skills would be too long for existing staff members. As far as possible membership of change teams should come from within the Railway and the workforce needs to be trawled to identify potential team members.

Team members need to undergo immediate education and training particularly in Strategic Management, Objective Setting, Team working, Communication and Problem solving. They must have or quickly develop a high level of skill in computer applications, particularly Word and Excel.

It is recommended that Change teams need to be established as soon as possible, initially with external skilled facilitation and change management expertise, but with team membership resourced mainly from existing employees.

Team members need to have, or quickly achieve, a wide range of skills including leadership, facilitation, change management, auditing and computer applications

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Environment and severance

A key issue in the successful reduction in staff numbers is the gap between the relatively secure employment in the SR and maintaining that standard of living in the open market place.

As far as SR employees are concerned this context is important if they are expected to voluntarily leave SR and enter what many still see as a grey economy. There is no doubt that SR is seen as a relatively secure employer, but also as a responsible organisation within the Economy as a whole. At less skilled levels of the workforce, the length of service, earnings levels, may not be as great a deterrent as at the Specialist and Management levels. These more educated levels also contain those who will be expected to take ownership of, lead and sell the change process, a process which will result in significant reductions in employment levels.

All of those to whom I spoke recognised the need to reduce staffing levels but all, also, saw minimum if any reduction in specialist staffing levels.

As a matter of urgency, there should be an embargo on all recruitment to SR. The concept of job rotation is well established as is the concept of skill enhancement. There is wide practice of staff gaining additional skills, and being paid for them, but not necessarily working in those roles. Therefore there should not be difficulty in filling vacancies through transfer rather than through recruitment of outsiders.

Cognisance must be taken, in the longer term, of the need for new blood and detailed analysis must be carried out, leading to a plan to counter any trend to an ageing workforce in the future.

There was an openness among the employees regarding the lack of work and an acceptance of the concept of jobs becoming redundant.

Pensioners have a legal right to choose to stay providing they pass the medical. In a reducing workforce, bringing in new blood is contentious and difficult. This is exacerbated by non-retirement (never mind trying to introduce the concept of early retirement)

The concept of a job being redundant exists and is accepted. However the consequences of mass redundancy is a different matter and the Company Union Collective Agreement certainly is clear on the commitment to retain staff despite the downturn in business. It is fair to note that many collective agreements in other countries have similar sentiments despite the acceptance that there can be staff reductions. In many cases they are designed to place a stake in the ground and the removal of the stake is merely a question of cost.

Severance Programme

To be successful a severance, or outplacement, programme

- must be attractive enough to achieve the required reduction.
- will typically include an early retirement option
- will insist that exception must be eliminated (for example all
- existing pensioners must terminate within a specified time frame. In
- future all employees must retire on reaching normal retirement age.
- the current option to remain in employment only subject to medical,
- must be removed.)
- will use service as a multiplier
- will include incentives or options covering education, retraining and
- possibly financial support in entering self employment. For example,
- all permanent employees could qualify for educational assistance
- with fees paid for the first year.
- will consider a continuation of the benefits perks already enjoyed,

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- but only for a specific limited period following termination.
- will normally be open to all employees.
- will insist that, on application, those who wish to leave do so as
- soon as is practicable.

An immediate ban should be placed on all permanent recruitment to SR.

A serious study must be made of the future shape of the organisation resulting in exact numbers of employees required to make the Company viable in the future. These conclusions along with the business rationale supporting them must be convincingly communicated to the workforce.

The severance package, content and funding must be designed and agreed so that it can be communicated simultaneously to all employees as early as possible.

The concept of a supported outplacement scheme should be considered as an alternative to a forced, and expensive, severance package.

Optional retirement with no age restriction must be phased out.

1.5.3 Culture

To overcome resistance to change and resistance to voluntarily leaving the organisation all employees need to clearly understand the new business reality. That the new company will be radically different from the present one must be at the core of all communications to the employees.

The fact that wages appear to be keeping well ahead of inflation may be a popular trend but it also impacts on peoples expectations for their future state within the economy. This could also impact rail company employees expectations as to levels of severance and ongoing support in the event of assisted staff reductions. Failure to match these expectations could result in a greater than anticipated resistance by individuals to voluntary departure.

There is a clear understanding among many managers and within the Trade Union that salary levels will rise significantly as part of the restructuring of SR. There is no evidence that such expectations are linked by staff to any improvement in business performance.

Clear and early decisions need to be made, communicated and implemented in relation to changes such as:

- the divestment of non-core activity
- the full implementation of a non-replacement policy
- the prompt retirement of all employees at the company's discretion
- rather than on a voluntary basis
- the immediate implementation of a company wide policy of non-replacement

Care must be taken to ensure that in portraying a vision of the future expectations of pay increases do not militate against severance as a necessary choice for many staff.

1.5.4 Trade Union and the Collective Agreement

The Company Union Collective Agreement (The "Branch Agreement") is a comprehensive document which details all of the pay and benefits of employees, undertakings from both SR and the Union and working conditions and practices. The Agreement
" ..... *specifies minimum and required guarantees of railwaymen in the sphere of remuneration, employment, working conditions and privileges .....*"
It is a legally registered document and has "*binding force for the parties*"

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It commits to the "*Growth of real income of employees against the background of implementation of social and economic programmes of railway transport*"

It covers the period from 1998 through 1999. The next Agreement is due to take effect in Q1 2000.

It is a very important document

- as a check list of what is at issue in terms of work practices for the future organisation
- as a listing of all the terms and conditions enjoyed by employees, pensioners and certain ex-employees of the railway company. These must be dealt with in some predictable way if they are not to become a source of future undermining of railway costs.
- as a source of the undertakings which are in place relating to employment, voluntary severance, lay-offs, retraining and so on
- as an indication of the role of the Trade Union as a full participant in the decision making process
- as an indication of monetary commitments entered into to spend substantial amounts of money on a range of benefits over the next two years

The Collective Agreement must be considered in the context of the Law of Georgia on Trade Unions.
Under Article 14 of this Law, *Obtaining and Consideration of Information,*
"The trade union ..... has the right to obtain ..... information required for security of its objectives on labour and social-economic issues ..... "
Under Article 19, *Participation in Collective Bodies of Administration*
The trade union may have ..... Its representatives in the collective bodies of an administration of an enterprise (supervisory board, advisory board etc.) ..... "

There are other Articles relevant to consultation, protection and representation. The legal background to Industrial Relations means that, aside from the general advisability of consultation relating to change, there is a strong legal basis for it.

It is recommended that there must be a detailed analysis of the exact meaning and practice of each section of the Collective Agreement particularly commitments to expenditure and job protection. A strategy must be developed as to how to move forward effectively given the existence of the Agreement and the general legal context. There must be immediate opening of discussions with the Trade Union on all aspects of the proposed changes.

1.6 Education and training

Provision of education and training in Georgia, mainly in Tbilisi, has been documented in 5.4 above.

Training needs

There will be substantial training needs arising from the proposed changes and full training needs analysis will need to be carried out, and updated on a regular basis into the future.

The following is an example of a needs analysis, the needs identified by a group of experts during recent visits. In addition the views of key managers within SR are incorporated into this list. The list is used for purposes of example and is not exhaustive.

A range of training needs identified in a sample of key management areas:

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- Financial Accounting
- Introduction to western accounting principles and concepts
- International Accounting Standards and the preparation of accounts in a format suitable for presentation to International Financing Institutions and potential investors
- Modern accounting system, cost classification and coding systems
- Creating cost centre and profit centre reporting systems in a modern railway
- Management accounting
- Budget preparation - involving the management team in the budgeting process
- Transfer of responsibility for budget preparation to cost centre managers
- Preparation of the corporate financial plan
- Financial Control in the modern organisation
- Variance analysis techniques
- Cost accounting - calculating unit costs, cost allocation and apportionment, overhead absorption, etc.
- Financial information for decision making, marginal costing
- Activity based costing
- Financial Management
- Management of working capital
- Treasury management
- Finance for non-financial managers
- Traffic costing
- Modern railway costing techniques
- Commercialisation in Business
- Freight accounting systems
- Developing cost centres
- Contract development
- Negotiation techniques
- Customer orientation
- Marketing
- Computer applications, particularly Word, Excel, Access, PowerPoint
- Environmental management
- Environmental awareness
- Impact assessment techniques
- Environment design
- Regulations and regulatory obligations
- Environmental protection and pollution control equipment
- Safe practice in materials handling
- Key training activities

The following is a summary of the key training activities which need to take place and which should form a major part of the task list for the Training Manager.

- identification of competencies for senior management and leadership positions and assessment
- of employees who show potential for entry to these roles.
- to support the understanding of the business rationale for the change, there needs to be business education for key managers in the communication chain and basic business literacy training for all employees.
- all those involved in managing, leading and facilitating the change process need support, preferably training, in English.
- to support the increased need for Human Resource professionals (HR specialists within Business Units) those currently in HR roles and those identified as having potential need to be trained in current best practice
- to support the establishment of an integrated on-line Human Resource database will require training in whatever CPIS is installed and in common computer applications

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- identification of training needs for all core groups and the development of training plans
- based on analysis of new roles and as staff reductions take effect a detailed retraining plan will be required
- for all future training serious consideration must be given to the establishment of in-house training activity rather than the expensive external activity currently in place.
- This should include buying in expertise where this does not currently exist within SR.
- all training needs to be co-ordinated through the change groups. It is essential that all training is geared towards the new organisation or to the process of getting there. Any non-essential training may be a drain on resources and if it is seen to take place may also undermine the credibility of the change plans.
- Much of the training requirement will emanate from the change groups. Where requests arise elsewhere they must be evaluated and cleared as in line with the company's objectives.
- the concept of competencies needs to be introduced. All those involved in training (trainers, change team members) should be at least exposed, and preferably trained, in the concept.

It is recommended that the post of Training Manager for SR should be established right away, reporting directly to the HR Manager. The list of key training activities, shown above, should be the basis for the initial task list for this job. If not already professionally qualified, the appointee should undergo formal training immediately on appointment.

A full Training Needs Analysis should be undertaken as soon as possible. The results of this analysis should form the sole basis for any education, training and development programmes.

A management development programme should be researched and implemented as soon as possible. This programme should be focussed on skills and should make full use of the excellent facilities already existing in Tbilisi (described in 5.4 above). The cost and the immediate need for skill enhancement requires that the majority of developmental activity should take place locally rather than outside Georgia. The CERMA/World Bank project (described in 5.4 above) should be investigated further without delay.

The Training Centre (formerly the Teknikum) should be reformed and used primarily (and preferably solely) for in-house training. The Centre should report directly to the Training Manager. A 'Train the trainers' programme should be implemented urgently to establish a resource for the identification of training needs and the development of training programmes at all levels. The core group should be developed from the staff of the existing Training Centre.

There are immediate needs in skill, knowledge and attitude development and programme for these should be activated immediately. Work should also commence straight away on a second phase focussing on long term needs. The laboratory project proposed by the railway faculty of GTU (see 5.4 above) should be discussed further as soon as possible. An English language training programme should be implemented as a matter of urgency.

Human Resource function

Despite no apparent formal HR training the depth of experience within the HR Department needs to be retained and forms a solid base on which to build. The particular experience of dealing with Industrial Relations will be essential to managing discussions on change and on future roles with the Trade Union, although developing Strategies to deal with future Partnership may be set elsewhere e.g. within the high level Change Team.

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The role of the current HR Department equates with the concept of professional HR management in Western companies. The number of HR Professionals/Specialists appears to be, at most, three or four. It was not possible to carry out a detailed analysis of specific experience although based on discussions and on the content of the Collective Agreement the breadth of the HR role is similar to that in HR Departments in the EU.

The expansion of HR to a presence in each Business Unit and, more immediately the need for a key group with knowledge of and commitment to the change process will require an increase in the number of HR professionals. Such a group cannot be resourced solely from the existing HR Department and there needs to be an early identification and development of a cohort of such HR professionals. This must happen at an early stage and the analysis should start with the current HR Department.

There will be a requirement for the development and dissemination of best practice policies and procedures to bring the company through the change process and to maintain the culture and practices required to continuously improve in the future.

There was a strong request from members of the HR department for exposure to best practice HR policies and practices. HR education is already available in a number of the Business Schools identified in Georgia and a developmental programme should be implemented urgently.

The existing group, augmented by those identified as having potential, should be given a formal HR education in the concepts and practices of modern HR Management. The Management Development facilities in Georgia that have been identified are capable of providing the required inputs. This development process should start as soon as possible.

1.7 Communications

Communications is key to

- the roll-out of the plan and the communications to all employees of the mission and objectives of the new organisation. Without this there is less chance of local implementation of plans that will support the overall objectives. In fact failure to communicate effectively will be more likely to result in counterproductive activity at local level which will undermine the whole commercial
- thrust of SR for the future.
- the maintenance of an up to date HR database which will depend on effective upward as well as downward communication.
- the periodic communication of progress as the change takes effect – which will be vital to morale as individuals are expected to make and take the risks necessary to maintain momentum as the plans take effect. The use of feedback is essential to maintaining
- morale
- the speedy response to any variation in the Change process so that contingency plans can be effected.

A key part of any change process is the ability to gather information, analyse, communicate decisions, gain feedback, keep people - management and those affected - appraised of progress, changes of direction, morale boosting achievement of goals and the passing of milestones.

This communication must be timely, fast and complete.

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This needs special attention and will need the power of technology and will need those at the core and those delivering and feeding back the messages to be trained, together. All slippage in the process will dilute the change process.

In SR there is strong evidence of communication systems in a range of modes. Meetings are regular both at management and at general depot and department levels. Notice Boards are used extensively and there is a newspaper produced and circulated containing general news and background information. Special editions of the newspaper are produced to communicate details on major developments, for example the Company-Union Collective Agreement and the legally registered Disciplinary and Grievance Procedure.

A comprehensive Communications Strategy must be developed to ensure the full range of communications tools is utilised to ensure the change process is understood and effected at all levels of SR.

The following key messages must be core components in all communications:

- The business imperative is the fundamental driver of the change programme.
- Downsizing is not an objective in itself but a direct consequence of modernising and restructuring the railway.

1.8 Information systems

Access to information on the Human resource in SR will be crucial to any attempts to restructure.

The use of Computers is at an early stage and the kind of information held is at a basic level

The HR Department already have a Computerised Personnel information System (CPIS). If a Business Unit structure is to succeed, then access to on-line HR information is essential. Currently, the basic details of some 7000 employees are on the system and the remainder are in the process of being input. However, deficiencies in the Network mean that information from many outlying areas can only be input on a periodic (currently monthly) basis. Thus the information for much of the system is unreliable for the majority of the time. There are currently three PCs in the HR department as well as a scanner and printers. There is a requirement for this number to be increased to five.

The advent of local HR Departments within each of the five Strategic Business Units will generate a requirement for an additional 10 PCs.

There are also requirements for the following:

- An urgent programme of inputting to get all HR records on the system. This will mean a short term requirement for additional HR people from within the system and the provision, also short-term, of two to three additional dedicated units. These units may be those allocated to HR in the longer term.
- A second need is for the placing of the HR system on-line in any plans for the networking of SR as a whole.
- There is also a need for the CPIS to be audited as it's potential and the extent of it's current use are not certain.

Tacis

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The CPIS should be integrated with the payroll system and although Payroll, as the disburser of monies should be part of the Financial function, the driving and control of the information should be from the central HR Department.

It is also possible to integrate electronic attendance systems which drive payroll and also feed into the hugely time consuming absenteeism control system. The distribution of such a system is, admittedly difficult where employees are in remote locations and is dependent on the computer network being in place for operational reasons.

There is an urgent need to establish this on-line Human Resource database. This will provide the organisation leadership and the change teams with the information required to make timely, accurate and informed decisions at the strategy stage as well as at the tactical stages as the change process evolves.

It will also empower the Human Resource function, give confidence to the professionals involved and align them as key supporters of the change teams and the change process.

There is a need for improvement of IT in starting in year one. The hardware in place must serve all those requiring to interrogate the CPIS database on-line as well as those who will input data to the system. This is estimated to be 13 PCs along with normal software and peripherals:

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RESTRUCTURING OF GEORGIAN RAILWAYS - LEGAL CONSIDERATIONS

RESTRUCTURING OF GEORGIAN RAILWAYS - LEGAL CONSIDERATIONS

1. *Introduction*

The task of the legal expert requires an assessment of the legislative environment and the provision of guidance on the drafting of a new railway law. The existing legal framework in Georgia has been studied and a suggested draft law has been prepared; the latter is a new document as the model based upon the TRACECA legal and regulatory framework project was considered not to be suitable for the reasons set out later.

2. *Legal Framework - Summary.*

2.1 Railways in Georgia are part of the network developed by the former Soviet Union and were regulated accordingly. With independence an entirely new situation arises; based upon an examination of the legal instruments referred to below and interviews with the Head of the Legal Department of the Ministry of Transport and discussions with local lawyers, the developments since independence are described in outline in this report.

2.2 In the former USSR railways were divided into 27 separate administrations, which reported to Moscow. One of these administrations, Caucasus Railways, was located in Georgia and Armenia; the significant and greater part of that railway network is in the territory of Georgia and now comprises Georgian Railways.

2.3 Following independence, a law dealing with railways was enacted on the 12th May 1994. The present Constitution of Georgia dates from 1995, and in order to comply with its requirements, the law on railways was amended in 1997. This railway law, as amended, is extensively reviewed later in this report.

2.4 Central to the organisation of enterprise in Georgia are the laws "On Entrepreneurs" (1994) and "On the Structure and Activities of Executive Power" (1997). These laws have been studied as has the Constitution of Georgia.

2.5 A new draft railway law based on the TRACECA model code had been worked upon within the railways administration for over a year and it is believed has been proposed by the railways administration for enactment. However, this has been done independently of the Ministry of Transport. This draft is extensively reviewed later in this report.

2.6 The law "On the Structure and Activities of Executive Power" envisages the existence of a railways department - Article 15.4

provides that the head of the Georgian Department of Railway Transport shall be appointed to and released from office by the President of Georgia. An agency of this kind would either report directly to the President of Georgia or to a Minister of the Government of Georgia. The railways presently *de facto* function entirely independently of the Ministry. Organisationally, the functions of the Ministry having to do with railway transport may be grouped in a structural unit; however it is strongly recommended that these should be regulatory in nature and have nothing to do with the commercial or technical management of railways.

2.7 The law "On Entrepreneurs" (Article 2.5) declares that the registration of enterprises is necessary, and lists the various kinds of enterprise. Where the present railway administration is concerned, it is clear that a joint stock company is appropriate.

2.7 The present railways administration should be viewed as an *ad hoc* one, since no charter has been put in place determining the management and structure of the railways administration, or its relationship with the Ministry of Transport. This needs to be rectified through legislation and the railways need to be given the necessary foundation to operate as a commercial enterprise. If the railways were to be a state agency, governed by the law "On the Structure and Activities of Executive Power" it would not enjoy commercial freedom; it would not be independent of the state, being part of the state, and would be little different from the type of administration which existed in the former Soviet Union.

2.8 International traffic is dealt with within the general structure of the present CIS. The technical regulations consist of the former rules of the Soviet Union Railways. While the present railway law refers to a charter for railways, none has been put in place.

3. ***Monopoly and Price Control Issues.***

3.1 Under the present railway law, all tariffs (passenger and freight) are confirmed by the Ministry of Transport with the agreement of the Ministry of Finance. International tariffs are determined on the basis of relevant contracts and agreements.

3.2 Under Article 1 of the present railway law, railway transport is a monopoly - it envisages railway transport as a single system; however it acknowledges some participation by private enterprise.

4. ***Review of the law "On Railway Transport".***

4.1 Annex 1 to this report contains a translation commissioned by the project of the law on railway transport. What follows is an article by article commentary on that law.

4.2

Preamble

The law is expressed to regulate railway transport activity, which is very satisfactory in that this approach is one which may allow for a multiplicity of railway transport enterprises.

Article 1

Article 1 allows for the possibility of private enterprise providing passenger, consignees and consignors services. This should be supported with a framework within which other railway enterprises may operate.

Article 2

This deals with the structure and management of railway transport. State control over transport is to be exercised by the Ministry of Transport and the Department of Railway Transport. The competence of the latter is stated to be determined by the Ministry of Transport. The Charter of the Railway Transport Department and railway regulations are to be confirmed by the Minister of Transport; the management structure is regulated by Georgian legislation; the Head of the Railway Transport Department is appointed by the President of Georgia on the nomination of the Minister of Transport.

The Charter above referred to has not yet been prepared. The legislation referred to is the Law on the Structure and Activities of Executive Power, which deals with the management of State Agencies. The railway considers itself to be such a State Agency.

This gives an unusual degree of independence to the railway, similar to that which existed in the former Soviet Union. The independence of the Head of the Railways Department (personally, in practical terms, answerable only to the President of Georgia) appears to have resulted in a stalemate between the railways and the Ministry.

However, it would be better if in regard to railway management, this Article, suitably amended, were expressed to be a transitional provision pending the establishment of the present enterprise of the Railway Transport Department as a State owned joint stock company. In

establishing the joint stock company, the railway infrastructure should be excluded from its balance sheet.

Following this the law "On Entrepreneurs" should generally apply, subject to requirements as to competence in the technical field of the management personnel concerned with operations, and subject to specific requirements concerned with the transparency of accounting. Georgian Railways should also be subject, while it is within the majority ownership of the State before and after becoming a joint stock company, to the achievement of objectives set out in a performance agreement between the State and the enterprise which should cover a five year "rolling" period, renewed annually.

The Article could also provide for a system of licensing of railway operating and management enterprises and their rolling stock based on satisfactory competence and financial resources; pending the establishment of the licensing section in the Ministry, this function may be undertaken by Georgian Railways for a limited period as agent of the Ministry.

Article 3

This sets out the legislation affecting railway transport.

Articles 4 & 5

Article 4 sets out the property of "railway transport" - covering rolling stock, power resources, telecommunications and signalling, loading equipment, structures etc. and prohibits their transfer without the consent of the Railway Department.

Article 5 sets out the territory of the railway which is needed to serve the railway infrastructure and for its development and also requires that the Railway Department carries out works to rectify environmental damage.

A better approach would be to:

- provide a definition of the railway infrastructure which includes the land and structures - telecommunications, signalling, stations, railheads, freight handling facilities etc. - which are essential to the flow of the railway traffic;
- provide that the railway infrastructure shall belong to the State of Georgia and may not be transferred (except for the disposal of redundant equipment) without the consent of the Government, but may be made available for the use of railway enterprises through licensing or franchise or access agreements;

- provide that the State shall enter into contracts with one or more qualified competent infrastructure managers on commercial terms for the maintenance, development and operation of the infrastructure, (the first such contract being for a transitional period with Georgian Railways);
- provide that rolling stock and other machinery and equipment may not be transferred by a railway enterprise during its operational life without the consent of the Ministry of Transport;
- provide for a planning process for regulating protective zones for railways, to be the responsibility of the Ministry of Transport;
- require the Ministry of Transport and all railway enterprises to observe the requirements of laws concerned with the protection of the environment, and to make good any damage caused to the environment.

Article 6

This Article deals with tariffs and provides for these to be set by the Ministry of Transport in agreement with the Ministry of Finance, except for international transit which is to be on the basis of agreements.

The likely purpose of this is to prevent abuse of a monopoly position by the railway for freight transport and ensure low fares for passengers; however it is not appropriate except in situations where the railway has a monopoly.

A better provision would be to:

- provide that railway enterprises shall be free to set their own tariffs in respect of freight, the only exception being where the railway enjoys a natural monopoly;
- where monopoly considerations apply, the tariff set by the Ministries shall be commercially based; if this is not possible, losses should be reimbursed to the railway enterprise by the Ministry of Transport;
- where passenger services are concerned, the State should initially reimburse losses where uneconomic services are required to be undertaken, and as soon as circumstances permit, introduce a contract system based on commercial principles for these services. Losses from these services should not be cross-subsidised from freight services.

Article 7

These provisions deal with safety and security matters. In regard to legislating for this, a licensing system for rolling stock and a regulatory system concerning procedures to be followed should be considered;

control of this should rest with the Ministry, but a transitional period where this would be done by "Georgian Railways" will be necessary.

Article 8

This article deals with protection of cargo etc. There is reference to a role for transport police which comes under the Interior Ministry, and is not a cost to the railway. This respects the general principle that the railway should be liable for normal security, but extraordinary security should be the responsibility of the State.

Article 9

This article deals with the co-ordination of activity following disasters.

Article 10

This article applies the civil and criminal law of Georgia to persons causing damage to the railway.

Article 11

This article applies the general law dealing with relationships between employers and employees to railway staff. There is a necessity to also make provision for critical staff to satisfy health and fitness requirements and to be of the required standard of competence. This can be met through a licensing system.

Article 12

Applies the Georgian language to management and operational matters. It should also allow for other languages to be used for international traffic, in accordance with international agreements.

Article 13

This applies Tbilisi time to the railway.

Article 14

This applies international agreements to international passenger and freight transport, and to combined transport.

Article 15

This applies the Civil Law to breach of contract by the railway enterprise. It might be extended to apply the law to all aspects of transport contracts.

Article 16

This requires the railway enterprise to provide obligatory insurance for personal injuries to passengers, and optional insurance in respect of freight and luggage.

Article 17

This article provides that access by industrial railway sidings is dealt with in the railway charter (which has not yet been created). The control of this function should be exercised by the infrastructure manager (see above) in accordance with the terms of the infrastructure management agreement.

General Comments

In addition to the comments set out above, additional matters arise, which are discussed below:

The management of the railway according to commercial principles.

Article No. 2 above may be extended to deal with the specific form of accounts to be maintained by railway enterprises, including Georgian Railways during the transitional phase. Separate cost and revenue accounts should be kept for freight, passenger and infrastructure activities.

Social services.

These services (except in regard to railway transport) should be taken from the railway enterprise, by establishing independent enterprises pursuant to the law "On Entrepreneurs" which may be State owned and supported where necessary from the State budget.

Ancillary activities.

These may likewise be removed from the railway enterprise, without obligation on the part of the State for financial support.

Private sector participation.

If the licensing system envisaged in the commentary on the law of 1997 as set out above is put in place, this should allow for private sector participation. Also, if Georgian Railways becomes a joint stock company it will be capable of establishing joint ventures. The

suggestions above envisage that the Ministry will enter into access agreements with other transport providers, and into contracts for infrastructure management, operation and development.

5. ***Review of the present draft railway law based on the TRACECA Model.***

5.1 The Georgian railways administration revised and amended the TRACECA model and sought to submit it to parliament for enactment. A copy of this is set out in Annex 2. The review takes the form of introductory remarks followed by detailed comment on the article as contained in the revised draft.

5.2

Introduction.

The Scott Wilson Kirkpatrick ("SWK") model Rail Transport Code is one of a series of model laws developed for use in the TRACECA countries. As SWK acknowledges, the models do not have to be slavishly followed and will require adaptation in order to suit national policy. The draft now under consideration for enactment in Georgia is an adaptation of the model.

The model developed by SWK is loosely based on that for French railways (SNCF) with the addition of much of the COTIF/CIM provisions coupled with substantial elements from the previous Georgian Railways statutes.

By way of preliminary comments:

- a model based on that for French railways SNCF is unlikely to sit easily with what is needed in the TRACECA countries. SNCF is probably the most technically advanced railway in the world, it consumes a vast quantity of investment funds and enjoys the support of the population as representing the excellence of French scientific and technical development. This, rather than any particular attractive quality of French Railway Law, is the reason for its success. In the case of the TRACECA countries, a model based on the legislation enacted in Germany after unification to deal with the railways of the former East German state might be more appropriate;

- international conventions such as COTIF consist of a set of rules subscribed to and supported in national legislation by the authorities of the countries concerned, following development by representatives of railway transport in those countries, often at the prompting of international agencies. The need for legislation arises because without legislation, the railway enterprises of a small number or even one of the countries might disregard the terms. Legislation is therefore needed to

promote confidence in the convention. Where national rather than international considerations apply, this is not necessary, or even desirable, since it leads to rigidity and inflexibility, and can result in a conflict of laws within the national jurisdiction. It is better by far for the Civil Law to apply in contractual matters, with the railway enterprises also free to develop suitable contractual regimes with customers, subject to control by the State, where necessary, to curb abuse of monopoly or dominant positions;

- while overnight change from the practices of the former Soviet Union is not possible, only to the extent that a country sees it to be necessary is it advisable to continue with elements of Georgian Railways statutes.

- as a general principle, laws should not be any longer than necessary;

- in a developing situation, it is a better approach to provide a framework permitting transition and development at a pace which is sustainable. If the law is too elaborate, it will not be fully observed, for reasons of practicality, and this will tend to undermine the law as a whole.

Review

The draft developed by the present railway administration in Georgia is an adaptation of the SWK model. The changes to the SWK model do not represent a move towards commercially orientated principles.

Article 1.

This sets out the purpose of the law - it is in the nature of a preamble. It would be preferable if the ordinary law were to deal with contract matters. It is not clear what "Railway" means - is it Georgian Railways or railways in general - this is very important.

Article 2.

What is meant by saying Georgian Railways is independent? Giving Georgian Railways recognition as a legal person without a structure is not advisable. The law should also extend the legal independence to all licensed railways.

Article 3.

This article sets out the legislation which applies to railways and is based on the SWK model.

Article 4.

This article deals with transport policy and is based on the SWK model. It is far from clear how the suggested role of regional bodies would operate, and could make planning cumbersome and bureaucratic.

Article 5.

This is the definitions article. There is no definition for "Railway". This has serious implications elsewhere in the text and tends towards making an independent monopoly. There is no definition of "Railway Infrastructure" (nor is there one in the SWK model) - this definition is essential.

Article 6.

This provides for an obligation to carry passengers, freight and baggage. It is based on the SWK model. As it stands it seems reasonable, however is it necessary? Matters such as this can be better regulated through a performance agreement with the State.

Articles 7 & 8.

These articles contain the SWK material in slightly different order, and with modifications. Both versions would require amendment. The law should instead deal with the railway infrastructure, which must remain in the ownership of the State, and Georgian Railways and other railway enterprises where certain restrictions on the disposal of their rolling stock etc. are advisable in the national interest. The possibility of privatisation of Georgian Railways should be recognised, subject to Government decision, and to the establishment of new railway enterprises (both in private and State ownership).

Article 9.

This article contains a subtle change to the SWK draft; it would give unlimited control to Georgian Railways of the railway lands. The draft requires amendment - these lands should be part of the railway infrastructure, the use of which by railways is regulated by agreements with the Ministry of Transport.

Article 10.

This article deals with protection zones

Article 11.

This article deals with railway transport management. It appears to give complete independence to Georgian Railways; however the complete absence of supervision constitutes a serious defect. The appointment and removal of the Head of Georgian Railways by the President of Georgia suggests that in practice there will be little accountability on the part of Georgian Railways to the Ministry of Transport. The management of the railway infrastructure, in particular, should ensure that other railway enterprises may operate on the infrastructure on equitable terms and in competition with Georgian Railways. This is hardly possible if Georgian Railways is in a position to impose unreasonable terms on its competitors.

Where the obligation to operate on commercial principles is concerned, and in regard to financial planning, much more detail and elaboration is needed - the SWK model is also does not provide this.

Article 12.

This article appears to provide that State supervision of railway transport shall be executed by Georgian Railways. Thus Georgian Railways would supervise both itself and other railway enterprises. Clearly this is not ideal. The article also provides for State control over the establishment and cessation of railway enterprises - this would better be exercised by the Ministry rather than by the Government.

Article 13.

This article applies "single national time" to railway transport.

Article 14.

This article provides for control of rolling stock standards. A licensing system would be better.

Article 15.

This article deals with the operation of railway stations, and places them under the control of Georgian Railways. It would be preferable if this matter were addressed within the context of the railway infrastructure.

Article 16.

This article is unclear as to how tariffs are to be set. The objective ought to be that the railway enterprise should be free to set tariffs, as it is in competition with other modes of transport, except where

protection is needed for customers in situations where the railway has a natural monopoly. The article also deals with the re-imbursement to the railway of losses caused by the imposition of obligations to provide uneconomic passenger and freight services. However it doe not set out explicitly where these responsibilities lie, nor does it explicitly prohibit the cross-subsidisation of these services from profitable freight services.

Article 17.

This article provides for cargo to be transported on the basis of contracts, on the agreement of the parties where not elsewhere defined.

Articles 18 - 35 & 43 - 57

These articles set out a complete and elaborate regime of contractual and operational matters. This can only result - if the proposals are workable at all - in an elaborate set of procedures which become set and inflexible, inhibiting the ability of railway enterprises to innovate and become more efficient.

There is no reason why contractual matters cannot be dealt with having regard to the general civil law relating to contracts and by the railway enterprises developing their own terms and conditions. This will in any event be controlled through the various licensing requirements as to rolling stock, equipment etc., access agreements, and the agreements between the Ministry and the infrastructure manager and between the Ministry and Georgian Railways (and if relevant, between the Ministry and other State owned railway enterprises). To the extent that is necessary, prevention of abuse of monopoly positions can be dealt with in the appropriate way.

Detailed comment on the individual articles is not being made, because of time constraints and because the enactment of such legislation would surely require detailed consultation with and input from other Ministries, which is not envisaged and which if embarked upon would cause substantial delays to the enactment of the Railway Law.

Instead it is recommended that these articles be deleted.

Articles 36 & 37.

This deals with "access railways". This might better be regulated through track access agreements between the owners of these railways and the Ministry as owner of the railway infrastructure (usually acting through the agency of the infrastructure manager). These agreements will address all the relevant technical, operational, charging and licensing matters.

Articles 38 - 42.

Intermodal transport is dealt with under these articles. Here again, it is best not to legislate for these matters. The State as owner of the railway infrastructure and as the owner of the ports can determine the rules of operation; the transport providers should agree between each other the contractual terms insofar as the intermodal aspects are concerned, and the contract with the customer and the general civil law can address other issues.

Accordingly it is recommended that these articles be deleted.

6. ***Discussion and conclusion on the requirements for a new railway law.***

6.1

Amendment of the existing Railway Law to take into account the recommended changes will have the following effects:

- the railway law will be kept relatively short;
- it will be in a form which is reasonably familiar to the Ministry and Georgian Railways;
- pressure of time will be kept to a minimum.

These are all positive effects, however it must be borne in mind that the text will be entirely new which may lengthen the evaluation time. However, the concerns expressed by the EBRD will be addressed by reference to the principles of Railway Restructuring and Commercialisation described in the EBRD letter of 14 October 1997, and the evaluation process is unlikely to be lengthened unduly.

6.2

Amendment of the draft based on the SWK model to take into account the recommended changes will have the following effects:

- the railway law will be in a form which may have similarities with that in other TRACECA countries;
- it will be in a form with which the EBRD is familiar.

These are positive effects; against them must be weighed the following negative effects:

- even omitting the articles dealing with contractual and operational matters, the railway law will be very long;
- the process of drafting will be very difficult because of incompatibilities, causing delay which cannot presently be quantified;
- the form will be unfamiliar within the Ministry;

- evaluation within the Ministry and Parliament will take longer;
- time pressures will be aggravated.

Balancing the effects, the advantage of the similarity of railway law with that in other TRACECA countries is more apparent than real. A law based on an amendment of the existing law will not cause any incompatibility, since the contractual and operating procedures will be the same for international traffic and international agreements and conventions will apply.

6.3

In all the circumstances, the clear preference is to amend the existing law.

7. ***New draft railway law.***

7.1 Based upon the above conclusions, a new law on railways has been drafted. This is contained in Annex 3 to this report. It is still in the nature of a discussion document; discussions are ongoing with the railways personnel. It also has been submitted by the Ministry of Transport to the parliamentary sub-committee on transport issues of the Committee of Branch Economy. It is currently being studied; a meeting has taken place attended by the Chairman of the sub-committee, the head of the railways legal department and the legal expert in the project team. Preliminary discussion has taken place at which a request for a further meeting was made by the Chairman.

7.2 The text of the draft law is contained in Annex 3 and there follows an article by article commentary on this draft.

7.3

Preamble.

The preamble in the existing law has been retained.

Article 1.

The existing Article 1 has been retained.

Article 2.

The new Article setting out definitions has been incorporated. This deals with railway as a system of transport allowing for a multiplicity of railway enterprises. Most importantly, it contains a definition of railway infrastructure - this is based upon the definition contained in EU Council Directive 91/440.

It also incorporates a definition of "public service obligations".

Article 3.

This set out a number of transitional provisions. It envisages the railways being formally constituted as a structural unit within the Ministry of Transport for a transitional period, pending the incorporation of a joint stock company pursuant to the law "On Entrepreneurs" not later than 6 months after the enactment of the law. It envisages the separation of ministerial functions from the functions of the railway joint stock company (Article 3.5) and the stripping out of non-transport social activities (Article 3.6).

Discussion following the preparation of this draft law suggests that it would be more appropriate for the transition to be achieved through an order of the President rather than through legislation - for parliament to legislate as envisaged in Article 3 of this draft might have constitutional implications. The draft was a suggestion on how the transition might be achieved; the important issue is that a transition of the kind envisaged will be necessary.

Article 4.

This provides that the Law on Entrepreneurs shall apply to the railway joint stock company; that the state owned shares in that company be under the power of management of the Ministry of Transport and allows for an ongoing and developing system of re-organisation on commercial principles.

Article 5.

This retains Article 3 of the present law.

Article 6.

This declares that the railway infrastructure shall always be the property of the state; it envisages the infrastructure being managed by a railway enterprise in accordance with a contract entered into with the Ministry of Transport. In the context of the present re-organisation, the contracting railway enterprise will be the present railway administration when established as a joint stock company.

Article 7.

This incorporates Article 5 of the present railway law.

Article 8.1.

This follows the principles enshrined in EU Council Directive 91/440 in providing independence in the direction management and administration of railways. It recognises the need for Georgian railways to be managed according to commercial principles and for transparent accounting in respect of infrastructure, passengers and freight.

Article 8.2.

This envisages a formal business planning process requiring Georgian Railways to operate on the basis of 5 years, "rolling" business plans.

Article 9.

This deals with public service obligations and non-commercial services imposed by the state. It recognises that the government should be made liable to pay compensation for the losses thus imposed.

Article 10.

This provides freedom to railway enterprises to set tariffs in respect of freight transport save only where protection is needed where monopoly situations arise.

Article 11.

This deals with the management and operation of the railway infrastructure; it sets out the functions of the Ministry of Transport, the system of management of the infrastructure on the basis of contracts entered into with railway enterprises and a regime of charging fees for the use of the infrastructure. It provides for the licensing of railway operators and the provision of access to the infrastructure to railway operators on a non-discriminatory basis. By comparison, EU Council Directives 95/18 and 95/19 (as well as 91/440) adopt a like approach.

Article 12

This Article provides for the supervision of railway safety to be undertaken on behalf of the state by the Ministry of Transport. Arrangements made for the appointment of inspectors and for the making of regulations. This Article incorporates elements of the present railway law - for example, Article 7.

Article 13

This Article incorporates the provisions of Article 8 of the present railway law.

Article 14

This Article incorporates the provisions of Article 9 of the present railway law.

Article 15

This Article corresponds with Article 10 of the present railway law.

Article 16

This incorporates the provisions of Article 11 of the present railway law applying the legislation of Georgia to the terms of employment of staff. It also provides for the making of regulations by the Ministry concerned with the training of specific categories of employees and the certification of their competence and compliance with medical standards.

Article 17

This Article incorporates the provisions of Article 12 of the present railway law.

Article 18

This applies TBILISI time to railway activities.

Article 19

This deals with delay and follows the provisions of Article 15 of the present railway law.

Article 20

This deals with compulsory insurance in respect of injury to passengers and follows Article 16 of the present railway law.

Annex No. 1

(Note: This translation was done by the project team; it has not been validated by local lawyers)

THE LAW OF THE REPUBLIC OF GEORGIA ON RAILWAY TRANSPORT

"The Law on Railway Transport" determines economical, legal and organisational basis of Railway Transport Activity, its place and role in national economy, regulated its relations with passengers, consignees and consignors.

Article 1. Railway Transport in National Economy.

Railway Transport is a part of single transport system, satisfies needs of population, enterprises and organisations of governmental and non-governmental sector, concerning transportation and transit and other services in local and international conveyance, also carries out military transit based on the charter on railway transport military transit, which is confirmed by the President of the Republic of Georgia

Private juridical persons may implement passengers, consignees and consignors service by the rule which is regulated due to the legislation.

Article 2. Structure and Management of Railway Transport.

State control over railway transport is carried out by The Ministry of Transport of the Republic of Georgia together with departments of Railway Transport, the competence of which is determined by the provision of the Ministry of Transport.

Charter of Railway Transport as well as regulations of technical exploitation are confirmed by the Minister for Transport of the Republic of Georgia, but management structure, re-organisation, change and determination of railway boundaries is regulated by the legislation of the Republic of Georgia.

The head of the Railway Transport Department, by the nomination of the Minister of Transport, is appointed and released by the President of the Republic of Georgia.

Article 3. Legislation in the Sphere of Railway Transport.

The legislation in the sphere of railway transport consists of the Constitution of Georgia, contracts and agreements of Georgia in International sphere, provisions of the Ministry of Transport of the Republic of Georgia and other normative acts.

Article 4. Property of Railway Transport.

Main funds of railway transport, rolling stock, rail and power economy, telecommunication and signalisation equipment, loading and unloading machinery, constructions and other objects, which are envisaged in the railway balance, is the property of railway transport.

Transfer of industrial and non-industrial objects to other organisations is forbidden without the consent of the Department of Railway Transport.

Article 5. Territory of Railway Transport, Zones for Protection and Protection of Environment.

In accordance with the legislation of Georgia, territory of railway transport is the territory in its usage.

Territory of railway transport is allotted for rails and stations (including right of way) as well as for constructions, buildings and other objects, which are necessary for development and exploitation of the railway. "Right of way" is adjoining territory of the railway, the sizes of which are determined by confirms norms and documentation, but no more than 20 metres on each side of outlying rail is allowed.

For the provision of normal exploitation of rails, equipment and other objects of the railway transport, located in the places of natural calamity, protective zones are regulated.

The rule on determining of protective zones, their sizes and regime of using the territory, which is allotted for this purpose, is determined by the legislation of Georgia.

Railway Transport enterprises and organisations are obliged to make provision for effective use of natural resources, and to safeguard the environment from contamination.

The Department of the Railway Transport is obliged to make re-constructions and compensate damages of ecological character in order to eliminate the results of accidents, crashes and other cases, caused by railway transport.

Article 6. Tariffs of Railway Transport.

All tariffs of passengers transportation, cargo and mail transit within the Republic of Georgia are confirmed by the Ministry of Transport of Georgia with agreement of the Ministry of Finance of Georgia, but the tariffs of international transit (including the republics of the former Soviet Union) are determined on the basis of their contracts and agreements.

Based on the contract, it's possible to compensate the work and service fulfilled by the request of cargo owners (work and service that are not envisaged by tariffs).

Article 7. Security of Railway Transport.

The Department of Railway Transport is obliged to make provision for safe movement of trains.

Rolling Stock, equipment and other technical means must correspond to the rules of railway exploitation, and requirements regulated by security, labour protection, ecological and state standards.

Railway stations and other enterprises, where intensive movement of trains is taking place and the shunting works are carried out are zoned of extended danger. In this area the rules of work producing, movement, rail crossing are regulated by the Department of Railway Transport and confirmed by the Ministry of Transport of the Republic of Georgia.

Near the buildings and rails of general use, it's forbidden to locate the objects which are connected with the produce of radioactive, explosive, poison, toxic substances, with their storage, transportation, loading and unloading as well.

The minimal approaching distance of rails to those objects as well as the places of railway intersections by pipes, communication and electronic lines are determined by appropriate constructive norms and rules, and co-ordinated with the Department of Railway Transport.

All the organisations and enterprises which send and get explosive, poison, radioactive and other kind of dangerous cargo (and) are obliged to make provision for their safe transportation based on the charter of the railway.

During the transportation process, protection of dangerous cargo is provided by transport police.

Article 8. Protection of Cargo and Objects in Railway Transport.

During the transportation, the protection of cargo, luggage and mail is provided by the Department of Railway Transport.

The most important objects and special cargos of railway transport in stations and during the transportation are protected by transport police. The list of such objects and cargo is confirmed by the Ministry of Transport of the Republic of Georgia by the nomination of the Department of Railway Transport.

The Department is materially responsible for consignees and consignors.

The realisation of the cargo which lacks the appropriate documentation and the cases of unprotected transportation are considered due to the legislation.

Safeguard of public order, struggle against criminality and fire control on railway transport must be provided by transport police and its territorial sub-divisions together with the enterprises and organisations of railway transport.

Anti-fire prophylactic operations are implemented and fires are extinguished by special organ of the Department of Railway Transport, in case of emergency - together with the fire brigades of the Ministry of Internal Affairs.

Article 9. Organisation of Working of Railway Transport in case of Emergency

Railway transport enterprises and organisations are immediately taking measures to eliminate all kind of crashes, accidents and events of natural calamity that may be preventive for the future development of railway transport.

Transport police, territorial sub-divisions of the police, troops and sub-divisions of the Ministry of Defence help railway transport to eliminate the results of crashes, accidents and events of natural calamity that may be dangerous for people's health, train movement, cargo storage and protection.

Local bodies of authority are obliged, during the natural calamity, to fulfil all kind of work due to the demand of the railway.

Article 10. Responsibility for Damaging of Technical Means, Prevention, Blocking up of railway Work.

Responsibility of an individual for damaging of technical means, prevention and blocking up of railway work is determined by the rule regulated by the legislation of Georgia.

Article 11. Working relations of Railway Transport Staff

The working relations of railway transport staff are regulated by the legislation of Georgia

Article 12. The Language of Management of Control and of Communication in Railway Transport.

All kind of accounting, balance, commercial, technical documentation, telecommunication, legal and technical information as well as relations of the staff in railway enterprises and organisations which are connected with the provision of train movement, passenger transportation and cargo transit is implemented in Georgian.

Article 13. Time for Accounting and Calculation in Railway Transport.

In the organisations and enterprises of the railway transport, which spontaneously take part in cargo transit, the time of single calculation and accounting is regulated - time of TBILISI, in order to provide the centralised management of the above-mentioned process.

Article 14. International Economical Activity of Railway Transport.

The organisation of passenger transportation and cargo transit in the international and mixed movement is carried out on the basis of International agreements and contracts.

Article 15. Responsibility of the Department of Railway Transport.

For breaking cargo delivery date as well as late delivery of cargo to the destination and the late delivery of passengers to appropriate stations the responsibility of the railway transport department is determined, based on the legislative rule.

Article 16. Passenger, Cargo, Luggage Insurance in Railway Transport.

For the social maintenance of passengers and the members of their families, state obligatory insurance of passengers from casualties is functioning in the railway transport.

In railway transport, voluntary insurance of cargo and luggage is also possible.

Article 17. The relations with approaching Rail Owners.

The relation of railway transport with organisations and enterprises, which have approaching rails, the conditions and rules of movement of their own rolling stock on the rails of general use is determined by railway charter.

The above-mentioned enterprises and organisations provide the safe movement of trains on approaching rails as well as the appropriate care of technical equipment and the effective use of rolling stock.

President of Georgia.

Mr. E. GHEVARDNADZE.

The law was passed in May 12, 1994. All amendments and changes were made in November 11 of 1977.

Annex No. 2.

Part I
General Provisions

Article 1.

Economic, legal and organisational basis as well as the place and role of railway transport in Georgia's economy and social sphere shall be defined by this Code. It regulates relations between the Railways, consignors, consignees, passengers and other juridical and natural persons being the recipients of railway transport services; it defines their rights, obligations and responsibilities.

The code defines the main conditions for passengers, cargo, baggage and freight transportation, relations between railways and other kinds of transport; it also sets basic regulations for the use of rails. This code also provides for the regulation of passenger transportation through railways of general use; of cargo and baggage including the cargo loaded/unloaded using the railway lines, still under construction, linked to the rails of general use.

Article 2. The Role of Railway Transport for the State Economy and Social Sphere.

1. The Railway transport of Georgia is one of the basic branches providing for cargo transportation and passenger services, promoting viability of all branches of economy and safe transportation of passengers and cargo the establishment of services market for national and international transportation and effective development of entrepreneurship. The state regulates and controls its activities; promotes the development of its material and technical basis and satisfaction of national needs. In some cases the Railways may be considered a natural monopoly determining special conditions for functioning and development of railway transport.

2. The state ensures the independence of railways in its economic activities; also the budget and accounts of railways is independent from the state budget and accounts.

The Georgian Railways as an independent legal entity, is liable for its assets, has the right to enter into credit agreements and formalise contracts with international financial organisations and foreign companies.

Article 3. Legislation on Railway Transport

1. This code defines main provisions for railway transport legislation in Georgia.
The legislation on railway transport is based on the constitution, the Civil Code, |Antimonopoly legislation, Law on the Protection of Consumers' Right and other laws; also on normative acts issued in compliance with the above laws and regulating railway transport activities.

Legal relations not covered by this code are regulated by legal and normative acts not conflicting with the provisions of this code, also by international agreements and treaties.

2. The executive body of the transport branch shall, on the basis of this code and with the participation of interested ministries and bodies, elaborate and approve the rules for cargo,

passengers, freight and baggage transportation through railways. These rules are registered by the Ministry of Justice. The executive body in the transport sector also approves the rules for passengers transportation, provision of passenger services and servicing cargo, baggage and freight of natural persons for their private use.

Organisation and provision of military transportation is regulated by the statute on military cargo transportation approved by the president.

3. Normative acts defining the functioning, development, passenger and cargo transportation rules and conditions, use and protection of railway transport, security, public order, crossing rails by other kinds of transport and facilities, labour protection, fire security and sanitary rules are in force on the Georgian Railways and shall mandatory for all juridical and natural persons on the territory of Georgia.

4. Relations on the Railways, its territorial units and enterprises and agencies under them, issues related to planning passenger and cargo transportation, organisation and supplies, distribution of income from passenger and cargo transportation, technical maintenance, protection of technical facilities, repairs and development shall be defined by the rules pertaining to Railways as well as by the agreement between the state and the Railways.

5. Where rules stipulated in this article differ from those stipulated in international agreements (treaties) on railway transport, they shall be superseded by the latter.

Article 4. Transport Policy in the Field of Cargo / Passengers Transportation

1. Common state policy in the field of cargo/passengers transportation provides for harmonious development of private and state railway transport taking into account its priority importance for regional transport construction and development, environment protection, energy efficiency and security, common state policy ensures expenditure on infrastructure, equipment, purchase of carriages, their use and maintenance.

2. Transport policy creates grounds for fair competition between different kinds of transport and clients, regulates conditions for their exploitation and assists their co-operation through effective development of mixed transportation.

3. Common transport policy is carried out jointly with state regional bodies on the basis of democratic planning with the participation of all interested parties. It allows for the elaboration of transport development projects by taking account of plans for national and regional development.

4. To meet the above objectives an agreement may be concluded between the state, its territorial bodies and the railways transport.

Article 5. Terms Used in This Law

For the purposes of this law the following terms shall be used:

"**Railway transport**" shall mean a mode of general transport by which passengers and cargo are transported through transport facilities moving on rails.

"**Territorial Division of the Railways** " shall mean railways enterprise organising and ensuring passenger, cargo, baggage, freight and post transportation to the region to which it provides services.

"**Railway line enterprises**" shall mean railway stations, directorate for passenger services, locomotive and carriage depots.

"**Right of way**" shall mean flat land pertaining to railway transport on which artificial construction, railway enterprises, railway power supply and communication facilities, railway stations, protection forests/vegetation and other sites required for railway exploitation are situated.

"**Protection zones**" shall mean areas of land necessary to ensure security, strength and sustainability of railway transport constructions, facilities and other sites; also slide-prone land adjacent to right of way.

"**Rails for general use**" shall mean rails through which railway stations perform operations: receive and send trains, passengers, cargo, freight, baggage and post; also perform shunt.

"**Dangerous cargo**" shall mean substances, goods, materials, industrial and other wastes included in a specific list. Due to their features and peculiarities they may become the cause of fire or damage inflicted on transportation facilities, cargo, equipment; or the cause of explosion of buildings, death of people, animals and birds; also the cause of injuries, poisoning, burns, diseases and environmental pollution.

"**International railway transportation**" shall mean the transportation of passengers, cargo, baggage, freight and post between Georgia and foreign countries.

"**Domestic railway transportation**" shall mean the transportation of passengers, cargo, baggage, freight and post within the territory of Georgia.

"**Consignor**" shall mean a person who concludes agreements on railway transportation with forwarders or on whose behalf these agreements are concluded; or shall mean a person who hands cargo over to forwarders or on whose behalf the cargo is handed over to forwarders in compliance with the agreement.

"**Consignee**" shall mean a person responsible for the receipt of cargo.

"**Bill of lading**" shall mean a written agreement on railway transportation accompanying cargo throughout its transportation and containing relevant information.

"**Transportation documentation**" shall mean a passenger ticket, baggage ticket. cargo ticket, bill of lading and a road book.

"**Rolling stock**" shall mean transportation facilities for cargo linked to each other as a single unit.

"**Container**" shall mean a unit for transportation for multiple use; it is a fully or partially covered storage for cargo; it is for multiple use and therefore is solid; it provides for cargo transportation by several means of transport without interim transportation, facilitates loading of cargo from one means of transport to another as well as its loading and discharge.

"**Passenger**" shall mean a person travelling by train and having a travelling document (ticket).

"**Baggage**" shall mean goods and items transported by a passenger.

"**Fees**" shall mean payments not included in the tariff for additional operations or works.

"**Freight**" shall mean goods and other items transported by passenger and cargo/post trains.

Article 6. The Right to Transportation and Issuing Relevant Information

1. The Railways shall transport passengers, cargo, baggage and freight where:

a) the consignors or passengers meet the requirements of this Code, the rules of passenger, cargo, baggage and freight transportation; also additional regulations issued by the Railways from time to time;

b) transportation can be carried out using ordinary personnel and ordinary means of transportation which meet the volume requirements for railway services;

c) transportation is not restrained by circumstances which cannot be avoided and eliminated by the Railways;

d) items to be transported are not included in the list of forbidden items for transportation or are allowed to be transported only under certain conditions stipulated in the Rules for cargo, baggage, passenger, cargo baggage transportation.

2. The client shall have the right to request information on transportation facilities and conditions for their exploitation.

3. The Railways shall not be liable for servicing cargo requiring special load lifting facility for its loading, transhipments and discharge if relevant stations do not have such facility.

4. The Railways shall be liable for servicing cargo which can be smoothly transported.

5. While using its services, clients shall have the right to conclude additional agreements with the Railways on the works and services related to transportation and not conflicting with the existing legislation.

6. Where cargo transportation cannot be carried out in compliance with railway cargo rules, the executive body responsible for railways jointly with consignors and consignees shall establish special conditions for cargo and responsibility of the parties for its safety

7. The Railways shall be liable for the provision of passengers, consignors and consignees with necessary and true information on the services provided under this Code and in conformity with normative acts of Georgia.

In railway stations lounges, passenger carriages, places of servicing the consignors and consignees of cargo, freight, baggage and others, information shall be provided in Georgian; taking into account the interests of the local population, information may also be provided in other languages.

Article 7. On the Ownership of Railway Transport

1. State enterprise the Georgian Railways, including railway line enterprises, during the transition period shall remain in state ownership.

2. The right of way, protection zones and rails for general use shall not be subject to privatisation.

Decisions on the transformation of the Railway Transport and other enterprises subordinated to the Railways, into joint stock companies and privatisation of their property, also terms and conditions, shall be taken solely by the Government of Georgia.

Article 8. Property of The Railway Transport

1. The main assets of the Railway Transport, rolling stock, rails, energy enterprises, communications and alarm system equipment, loading-discharge facilities, buildings, constructions and other sides registered under the Railways, shall be the property of the Railway Transport.

Production and non-production enterprises being in the ownership of the Railway Transport shall not be handed over to other bodies without the permission of the Railway Transport Department.

2. In conformity with the Rules in the Railway Transport, contracts on the handover of the Railway Transport assets for industrial exploitation, also for sale, swap, lease, collateral, handover for temporary use free of charge, writing off rolling stock and containers and management of operations of enterprises and bodies shall be executed by the administration of the Railways.

3. Residential areas in houses the construction of which is funded from the profit of enterprises and bodies of the Railways, shall be privatised on the decision of the Railways administration.

Part II
Land and Protection Areas Pertaining to the Railway Transport

Article 9. Land Pertaining to the Railway Transport

1. Land handed over free of change and for an unlimited period of time to enterprises and establishments subordinated the Railways and responsible for specific tasks shall pertain to the Railway Transport. Here also belongs the land assigned for rails and stations (including right of way and protection zones) and required for the exploitation and reconstruction of railways with the prospect of its development, define by the established norms and projected budget documentation, but no smaller than 20 metres from both edges of the railway.

2. The rules for the use of the land within right of way shall be determined by the Department of Georgian Railways Transport in conformity with the legislative requirements.

Article 10. Protection Zones of the Railways Transport

To ensure the security of the population and proper exploitation of rails and railway transport (including industrial sites and other means of transport) situated in the areas prone to landslides, avalanches, erosion floods and other hazards, protection zones shall be established.

The rules for the establishment of the protective zones, their number and the rules for using land within these zones, shall be determined by the executive government body in charge of transport.

Part III
Railway Transport Management System, Establishment of Enterprises and Cease of Their Activities

Article 11. Railway Transport Management

1. The competence of the Georgian Railways, the Railway Transport and other enterprises shall be defined by this Code and other legal and normative acts.

2. Control over the railway transport shall be executed by state bodies liable for performing controlling functions in conformity with the existing legislation.

3. Government and local governance bodies, public and other organisations shall not interfere into the technological management, commercial or industrial activities of the Railway Transport.

4. The candidature for the post of the Head of Railway Transport Department shall be submitted by the Minister or Transport and appointed and dismissed by the President of Georgia.

The management of the Railways shall be executed in conformity with the principles of commercial companies.

This shall also refer to contracts on public services concluded with competent state bodies.

5. The Railways shall independently elaborate business plans, investment and financial programmes.

6. In conformity with the main political directions defined by the state, national industry plans, including investment and financial plans, the Railways shall independently:

•control the provision of services and application of tariffs;

•make decisions on matters of personnel, assets and procurement;

•develop its share in market relations, elaborate new technologies and new types of services;

•carry out a new activities related to railway transport; elaborate and implement new and progressive methods.

Article 12. Conditions for the Establishment and Cease of Activities of the Railway Transport Enterprises.

1. The State supervision of the Railway Transport enterprises shall be executed by the Georgian executive government body represented by the Department of Railways. Its competence shall be defined in the Railway Transport Department Regulations.

The establishment, reorganisation and liquidation of the Railways shall be decided by the Parliament of Georgia. The establishment, of the borders of the Railways change and regulation the Railways management structure shall be carried out by the executive government.

2. The Railways administration shall decide on the establishment, reorganisation and cease of activities of the Railway enterprises and other sites.

Article 13. Time

Single national time shall be used among the enterprises and organisations of the Railways directly participating in the transportation.

Part IV
Organisation of Railway Transportation

Article 14. Transportation Facilities for the Transportation of Passengers, Cargo, Baggage and Cargo-Baggage

1. Passengers, cargo, freight and baggage shall be transported through the railways in railway cars and containers, also in railway cars owned or leased by juridical and natural persons.

2. The rolling stock, regardless of its ownership, to be used for the transportation of passengers, cargo, freight and baggage through rails, shall satisfy the requirement of the technical exploitation Rules of the Railways; a newly constructed rolling stock shall have the certificate of its compatibility with the existing requirements.

After capital repairs of railway cars their container volume shall be examined

Containers used for cargo regardless of their ownership, shall comply with existing standards. Newly constructed containers shall have the certificate of their compatibility with the existing requirements.

Article 15. Railway Stations

1. The Railways shall carry out relevant operations for passenger, cargo, baggage, freight and post transportation.

The stations shall perform operations related to the receipt, loading, discharge and release of cargo in railway cars, minor consignments and containers, also operations related to the transportation of passengers, cargo and cargo baggage.

Cargo agencies, cargo and box offices and other units shall be established with a view to formalise transportation documentation and collect charges for servicing and transportation of passengers, consignors and consignees. Stations shall be opened and closed down, also all or some of their operations shall be carried out or terminated on the decision of the Railway Transport Department administration. Information on these decisions shall be published in the railway tariff Guide and Transportation and the tariff Rules. Names of stations or platforms and their change shall be defined by the executive government bodies.

Article 16. Railway Transportation Tariffs

1. Tariffs for the transportation of passengers, cargo, post, baggage and freight within the territory of Georgia shall be approved by the executive government body in charge of transport on the agreement with the Ministry of Economy; Tariffs for international railway transportation (including the CIS) are defined on the basis of international agreements and treaties.

The rates for the use of railway cars (containers) and fees for additional services related to railway transportation but not included in the tariffs shall be defined by the Railways administration.

Information on the tariffs of passenger and cargo transportation, also information on the changes in fee rates shall be publicised through media 10 days before – the introduction of these changes, if not provided otherwise by international agreements.

Article 16, Option 2 for item 1, paragraph 2.

Free (contractual) tariffs shall be defined for the servicing and transportation of passengers, cargo, baggage and freight. These tariffs shall regularly publicised by the Railways.

2. To avoid the creation of monopoly structures and exclude unfair competition, the Ministry of Economy of Georgia, on the request of the executive government body in the field of transport, shall introduce sample or regulatory tariffs for railway transportation, cargo escort and security charges and additional services.

3. When setting passenger and cargo transportation tariffs at levels where the Railway expenditure is not covered by incomes, the difference between the tariffs based on the estimated expenditure and set tariffs shall be paid to the Railways from the relevant budget.

4 The cost of works and services carried out by the Railways on the request of consignors, consignees and passengers not contained in Tariff Guides, also the cost of works carried out by consignors and consignees on the request of the Railways contained in the Tariff Guide, is reimbursed upon agreement of the parties.

Article 17. Principles of Cargo Transportation through the Railways

1. Cargo shall be transported on the basis of contracts.

2. Conditions for the railway transportation of cargo, also responsibility of the parties not defined in this Code, other laws or subordinate rules, shall be defined upon agreement of the parties.

Article 18. Cargo Transportation Contract: Bill of Lading

1. Under the Bill of Lading being the main document certifying cargo transportation, the forwarder shall be liable for the transportation of consignor's cargo to the point of destination and hand it over to consignee. The consignor shall be liable to pay the charge prescribed for cargo transportation.

2. The Bill of Lading shall be signed by the consignor and addressed to the consignee. It shall be handed over to the consignee in the station of destination together with the cargo.
The date-stamp pertaining to the station and indicating the date of receipt of cargo for transportation, shall be put on the Bill of Lading.

3 To confirm the receipt of the cargo the station shall give the forwarder a cargo invoice or a copy of the Bill of Lading.

4. The contents and format of the Bill of Lading, also the rule for filling it in shall be defined by the cargo transportation Rules.

5. For each item to be transported the consignor shall submit relevant railway transport Bill of Lading and other documents specified by relevant normative acts. The Bill of Lading and the invoice issued on its basis to the consignor after the receipt of cargo, shall confirm the conclusion of a contract on cargo transportation.

Under the contract the Railways shall be liable for timely and secure transportation of cargo to the railway station of destination, also meeting cargo transportation conditions and discharge of cargo to the consignee. The consignor shall be liable for covering cargo transportation costs.

The executive government body in charge of Railways shall elaborate and approve documentation for cargo transportation by the railways for general use to be published in the Rules for Railway Transportation and Tariffs. To confirm the receipt of the cargo to be transported, the Railways shall be liable for putting a date stamp in the railways Bill of Lading.

An invoice on the receipt of cargo shall be provided to the consignor after the relevant box of the Railway Book ship is signed.

Upon payment of charges the Railways shall provide the railways Bill of Lading and application forms to consignors and consignees, also copies of documents on actual expenditures, requested by consignors and consignees including registration cards, railway car discharge documents and letters of acceptance.

6. The consignor shall pecuniary responsibility stipulated in this code for the truthfulness of information recorded in the railways Bill of Lading by the consignor or on his behalf; also for the consequences resulting from unreliable, inaccurate or incomplete information recorded in the Bill of Lading by the consignor.

The Railways shall carry out random checks to examine the conformity of the volume of cargo and other parameters contained in the railway Bill of Lading with the information in the corresponding Bills of Lading filled in by the consignor.

For the provision of unreliable, inaccurate and incomplete information on the cargo requiring special security measures, also for sending forbidden cargo or incorrect indication of features of the cargo, the consignor shall bear pecuniary responsibility under Article 55 of this Code.

Article 19. Contracts on Passenger and Cargo Transportation by Railways

If they so require, the Railways and the consignor may conclude a long-term contract on cargo transportation. The contract will contain the information on the volume of transportation facilities, terms and conditions for the assignment of transport facilities, submission of cargo for transportation, also provision of transportation and other conditions not specified in this Code and Transportation Rules.

In conformity with the above contract the Railways shall be liable for receiving cargo in agreed quantities. The consignors shall be liable for presenting cargo for transportation.

The Railways and the client (juridical and natural persons) shall, if they so require, conclude long-term contracts on passenger transportation. The contracts shall specify the rules for passenger transportation, amount of charges and other conditions.

Article 20. Loading and Discharge

1. The cargo shall be loaded and discharged to railway transport warehouses and platforms referred as the areas of general use; also to warehouses and platforms alongside the rails not referred to as the areas of general use and belonging to or leased by consignors, consignees and expedite enterprises.

The areas for general and non-general use shall be equipped with relevant constructions and facilities for servicing/processing railway cars (containers) and shall meet environmental requirement.

The owner of these facilities shall ensure that the requirement of this article are met at the owner's expense; the conformity of specially assigned areas with the requirements shall be ensured through the funding provided by consignors and consignees to whom these areas are assigned.

Areas for general use where separate cargo transportation operations are performed, shall be equipped by special cargo elevators, loading ramps, special platforms, cargo loading platforms, water supply points, disinfecting and washing facilities.

The areas for non-general use shall be equipped with equipment, facilities and construction to ensure timely execution of cargo loading discharge operations, servicing of non-frost-resistant cargo, cleaning (washing) of railway cars and containers after their discharge, also security of rolling stock and containers.

2. Railway cars and motor cars shall be loaded and discharged:

a) In the areas of general use of the Railways equipped with relevant machinery and facilities and upon agreement with the consignor (consignee) except dangerous and perishable cargo; raw organic produce to be transported in over 0,5 tons per unit; outsize, liquid, loose and bulk cargo to be transported in special rolling stock. On the agreement with the consignor or consignee representatives, the Railways shall charge consignors and consignees for load/discharge of cargo. The amount of charge shall be defined by the Tariff Guide.

b) by the consignor and consignee – in the areas of non-general use, also in the areas of general use if loading of cargo is not necessary for the Railways.

3. The loading and discharge of cargo shall be provided by consignors and consignees. The Railways shall also provide loading/discharge operations if it is equipped with relevant facilities and load lifting mechanisms.

4. In the circumstances of force majeure (such as fire, snow, wind, flood etc.) and wars, blockade, epidemics and other emergency situations the Head of the Railways Department shall terminate or limit the loading of cargo, baggage and cargo baggage. The Head shall promptly notify, in writing, the executive government body in charge of transport and relevant railways administrations of the measures taken and terms. The executive government body shall promptly notify the Georgian government.

The consignors shall be liable for stopping loading in the forbidden direction, notifying the Head of Station in writing, on the termination and limitation of loading and terminate the submission of cargo for transportation.

The under loading caused by the termination or limitation of loading shall be covered in conformity with cargo rules.

5. Cargo shall be loaded into cargo cars and containers in conformity with technical rules of loading but should not exceed the loading capacity of cars and containers.

The cargo shall be placed and fixed in conformity with the technical requirements for its placement and fixing.

The list of cargo which may be transported by open rolling stock, also the list of cargo which may be transported loose or in bulk, shall be defined by the Department of Railways, and published in the Transportation and Tariff Rules.

Facilities for loading, fixing, transportation, packaging and other facilities shall be installed before loading and removed after discharge by consignors, consignees or the Railways depending on which body is engaged in loading and discharge.

These facilities shall be provided by the consignor who records the installed facilities in the railway Bill of Lading to be handed over to the consignee together with the cargo.

6. The Consignor shall be responsible for all consequences resulting from improper loading. Also losses inflicted on the Railways as a result of improper loading shall be compensated by the consignor.

Article 21. Volume of Cargo (Weight)

1. The railway Bill of Lading submitted by the consignor upon submission of cargo, shall indicate the cargo volume determined according to template, standard or by weighing. For packaged weight and weight per unit of cargo the number of places shall also be determined. The volume shall not be determined by calculations and measuring cargo as loading railway cars and containers to their full capacity, may result in exceeding the allowed load capacity of railway cars and containers.

2. The volume of cargo shall be determined by:

a) the Railways – while loading in the areas of general use;

b) consignor – while loading in the areas of non-general use.

3. The consignor shall determine the volume of cargo according to template, standard, by calculation, measurement and estimation.

The Railways shall charge a fee for weighing the cargo.

4. The Rules for determining the volume and quantity of cargo and indicating this cargo in the Bill of Lading shall be defined in accordance with cargo transportation Rules

5. For weighing cargo and baggage to be transported:

•the Railways shall have a sufficient number of weighing facilities in the areas for general use;

•the consignors and consignees shall have a sufficient number of weighing facilities in the areas of non-general use and maritime ports.

6. Weighing facilities shall be subject to state inspection and sealing. The Railways on the basis of contracts shall provide technical service of (examination, repairs, checking) weighing facilities pertaining to consignors, consignees and other juridical or natural persons

7. Upon discovering overloading of railway cars by the station (initial or interim) surplus cargo shall be discharged.

The Railways shall promptly request instructions on the discharge of surplus cargo from the consignor or consignee, if this is foreseen in the contract.

8. In addition to the fine, the cost of surplus cargo transportation shall be paid to the consignor and consignee according to the same tariff as for the main cargo transportation.

The cost of discharging and storage of surplus cargo shall be paid according to the same rules.

Article 22. Transportation Planning

1. The Railways shall elaborate and approve annual and quarterly cargo transportation plans.

2. Cargo transportation through the Railways shall be carried out upon submission of application filled according to the standard. The application form, its filling and submission, also its processing and registration shall be defined by the cargo transportation Rules.

3. The consignor shall be liable for submission of an application to the Department of Railways Cargo Agency no later that 10 days before the beginning of transportation; applications on export, international and mixed cargo transportation shall be submitted by the consignor no later than 15 days before the beginning of transportation.

4 To draft a technical plan for cargo, by the Railways, the consignor shall be liable for the submission of the Department of Railways the information on the volume of cargo to be

transported in the following month no later than 10 days before the beginning of the calendar month and no later than 15 days before the beginning of the calendar month for the cargo to be transported through international and mixed railway transportation.

5. The transportation of cargo consigned for eliminating the consequences of emergency situations shall be transported upon its submission to the Railways.

6. The application for cargo transportation shall be submitted to the Department of Railways in 3 copies. The application shall indicate the volume of cargo in accordance with the established nomenclature by railway cars and tonnage, also the type of cargo, railway (country) of destination and dates of loading; the application for local transportation shall contain the type of cargo, station of destination and dates of loading.

One copy of the application shall be sent to the consignor, another copy – to the Head of Railway Station.

7. The Department of Railways shall consider the submitted application within 10 days, notify the consignor on its receipt and return it to the consignor with justification for refusal.

8. If the consignor's application contains changes made by the consignor regarding the redistribution of cargo in international as well as local transportation (changes in railways and stations of destination) when transportation under general application has been completed, the consignor shall be paid fees according to the numbers of changed railway cars (containers) according to the following rates:

•0,03 minimum remuneration per ton of cargo to be transported in cars and in tons;

•two minimum remuneration for cargo to be transported in railway cars (regardless of their types and number of pivots);

•0,1 minimum remuneration per container the volume (gross) of which does not exceed 5 tons;

•0,3 minimum remuneration per container the volume (gross) of which is from 5 to 10 (inclusive) tons;

•one minimum remuneration for cargo to be transported in containers the volume of which is 10 tons (gross) per container.

9. No later than 3 days before the start of cargo transportation under the application the Head of Station together with the consignor shall confirm the required number cars and containers according to dates, types of cargo and railways of destination and record this information in the registration card to be signed by the Head of Station and consignor upon the conclusion of accounting period of 24 hours.

10. On the request if the consignor the Railways administration shall be liable for:

allowing, in special cases, inter-station cargo transportation (within one Railway station) upon payment of the prescribed charge.

Such transportation shall be recorded in the application and included in the volume of transported cargo.

•substituting closed transportation facility with an open one, if the transportation of such cargo is allowed by the cargo Transportation Rules; also substituting one type of rolling stock with another;

•substituting the railways (countries) of destination and railway stations of destination indicated in the application.

Article 23. Rules for the Provision of Transportation

1. Cargo transportation shall be provided by block trains, railway cars, low-tonnage, container and small consignments. The conditions for the transportation of the above consignments as well as domestic items shall be determined by the cargo transportation Rules

2. Cargo transportation is provided at cargo speed or high speed.

The criteria for the determination of cargo speed and railway destinations, in which cargo is transported at high speed, shall be defined by the Department of Railways. The list of these destinations shall be published in the Transportation of Tariff Rules.

The speed of transportation shall be chosen by the consignee and recorded in the Bill on Lading.

If the transportation of cargo is allowed only at a certain speed the consignor shall be liable for indicating this speed in the Bill of Lading.

The Head of the Department of Railways shall have the right to establish stretches for high speed cargo within national transportation.

3. Cargo transportation on narrow-gage railroad, also on railroads with different width, shall be provided in conformity with railway cargo transportation Rules.

Article 24. Cargo the Value of Which is Disclosed

1. Consignors may present the cargo the value of which is disclosed. The disclosure of value of precious metals (gems) and jewellery, pieces of art, crafts, antiques (including carpets), testing machinery, equipment and tools, video and audio equipment, computer and copying equipment, also domestic items (transported without being accompanied by the consignor's escort) shall be mandatory.

Payments defined in the Tariff Guides shall be charged for the disclosure of cargo value.

2. In conformity with the cargo transportation rules, any cargo may be subject to the obligation ??????

In such cases the payment of charges shall be made upon agreement of the sides.

Article 25. Preparation of Cargo for Transportation

1. The consignor shall be liable for the preparation of cargo for transportation, ensuring the safety, protection of cargo and rolling stock (containers) and optimum use of their load capacity and scope.

The requirements for railway cargo packaging and quality of production shall comply with state standards and technical conditions of production approved by relevant bodies.

The quality of perishable cargo to be transported also its packaging shall comply with production standards and technical conditions indicated by the consignor in the certificate of quality, and allow for the preservation of cargo within the period of transportation.

2. The consignors and consignees, sending and receiving dangerously explosive, inflammable, radioactive, poisonous and other dangerous cargo shall be liable, similarly to the Railways, for ensuring its safety, having facilities and mobile units for dealing with the aftermath of accidents and emergency situations, ensuring that these units and consignor/ consignee experts are promptly sent to the place of accident.

3. The consignor shall bear pecuniary responsibility losses, environmental pollution, poisoning and hindering railway traffic resulting from an accident caused by the consignor.

Costs related to eliminating the aftermath of accidents shall be covered by the consignor.

The Railways shall bear similar responsibility if it causes the accident.

When causing an accident in the course of transportation, the consignor, upon notification by the recipient railways, shall be liable for immediate sending of the mobile unit or its representatives to the place of the accident.

Article 26. Assigning of Transportation Facilities and Submission of Cargo for Transportation

1. Upon receipt of an application the Railways under the contracts for organising transportation or other contracts shall be liable for assigning, within the terms stipulated in the contract, railway cars and containers which are proper, cleaned from waste and cargo garbage, and if needed, disinfected and washed.

Assigning unclean transportation facilities for loading shall be allowed upon agreement with the consignor. In such cases the transportation facility shall be prepared by the consignors, provided the Railways reimburses the costs related to this activity. On agreement of the parties the consignor shall be given the necessary time for cleaning the cars and containers.

The station shall be liable for notifying the consignor of the time for assigning railway cars and containers no later than 2 hours before their assigning to the consignor.

2. The railway tanks and bunkers of the Railways shall be prepared for liquid cargo by the Railways or the consignor at the expense of the Railways, upon agreement between the parties.

The specialised railway tanks not belonging to the Railway Transport or are let by the Railway Transport, shall be prepared for loading by the consignor.

Before loading cargo into tanks the consignor examines the hermetic nature of the tank, the state of its liquid discharge facility, the condition of its hardware and discharge facilities.

3. The commercial suitability of railway cars and containers (the unpleasant smell and other unfavourable factors affecting the process of loading and the state of cargo while transportation; also the characteristics of inner constructions of container hoods and condition of cargo beds) for specific cargo shall be determined;

for railway cars – by consignors if loaded by them and by the Railways if loading is provided by the Railways.

for containers – by the consignor.

4. The consignor shall have the right to refuse unsuitable cargo transportation facilities; the Railways shall be liable for supplying the consignor with suitable railway cars (containers) for cargo transportation.

5. The Railways shall determine the technical suitability of loaded railway cars used for double operations and provided for loading specific cargo.

Article 27. Sealing of Loaded Railway Cars and Containers

•1. Railway Cars and Containers shall be sealed:

•using the Railways seals if the cargo is loaded by the railways; with the seals of the consignor (port) if the cargo is loaded by the consignor (port).

•closed carriages and containers transporting private cargo pertaining to natural persons shall be sealed using the seal of the Railways or the transporting organisation, at the discretion and expense of the consignor.

2. This list of cargo allowed to be transported by cars and containers without seals, also rules for sealing railway cars and containers and putting locking facilities shall be defined by cargo transportation Rules.

3. After opening railway cars (containers) for customs inspection, the new seals and locking facilities shall be put by customs bodies.

4. Seals, sealing materials, locking facilities, unlocking facilities screw-fasteners and sealing wires shall be supplied to the consignors and consignees by the Railways upon the payment of charge.

Article 28. Rules of Payment

The cost of cargo transportation shall be covered, including the shortest distance to the station of destination; also in cases when this distance is increased due to reasons caused by the Railways. The rules for determining this distance shall be defined in the Tariff Guide.

The cost of cargo transportation and other charges shall be paid by the consignor prior to sending cargo from the station, if this Code or the contract does not provide otherwise. The Railways may hold up cargo transportation until the above charges are paid.

The supply of railway cars (containers) for further loading shall be discontinued until the change for previous transportation and other charges are paid.

Upon agreement with the consignor and consignee, the Railways administration shall have the right to decide on the amount of transportation fee and other Railway charges.

Guarantees for the payment of transportation fees and other Railway charges shall also be agreed, including the responsibility for the sides for breaching the terms of agreement.

Final payment related to cargo transportation shall be made by the consignor after the cargo arrives in the station of destination.

The transportation fee and other charges shall be paid in cash, bank checks, payment orders accepted by banks and other types of settlements approved by the National Bank of Georgia.

The settlement date for payment of cargo transportation fees and other charges shall be the date of receipt of cargo for transportation;

The settlement date in the station of destination shall be the date of handover of cargo to the consignee recorded in the Bill of Lading. In case of delay of settlement caused by the consignor or consignee, a fine amounting to 0,2 per cent of the amount due shall be paid to the Railways from the date of delay.

The responsibility for the delay of railway cars and containers before the payment of charges to the Railways shall be borne by the consignor liable for the payment of charges for the storage of cargo and use of the railway cars (container).

Article 29. Fees for the Use of Railway Cars and Containers

1. Consignors and consignees shall be liable for the payment of fees for the use of railway cars and containers upon their provision, by the Railways, for loading discharge.

2. Consignors and consignees shall pay to the Railways an hourly fee (for the use of cars and containers) indicated in the Tariff Guide, while using railway cars and containers or while waiting for their supply and if the delay in supply is caused by consignors and consignees themselves.

3. Different rates for the use of railway cars and containers shall be specified on the basis of terms of supplying cars to the railroad for general use and ... types of railway cars and containers and their turnover.

4. If the consignee (consignor) performing, loading – discharge operations on the railways of general use, delays the railway cars (containers), the charges for cars and containers shall be paid under Items 1 and 2 of this Article.

5. For delaying railway cars and containers belonging to or leased from the Railway Transport bodies by consignors and consignees, the latter shall be charge the payment of 50 per cent of the 50 per cent of the fee for the use of railway cars and containers to be paid to the Railways while the railway cars and containers are on the railroad for general use.

6. The fees for the use of refrigerator railway cars or trains shall be determined on the basis of time required for loading and discharge of the end car of such sections and of refrigerator trains.

7. The fee for the use of railway cars indicated in the Tariff Guide shall be reduced by 50 per cent for narrow-gage railroad.

Article 30. The Change of Cargo Destination

1. On the written application of the consignor or consignee and in compliance with cargo transportation Rules, the Railways shall change the address of cargo, i.e. changes the consignee or the station of cargo destination

The change of address shall be made upon the payment of fees.

2. The body on the application of which the consignor or the station of destination is changed, shall be liable, to the addressee for the results caused by the change and shall be liable for proper settlement between the consignor, the previous addressee and the actual consignee.

3. The change of cargo address of subjected to customs control shall be made on the consent of the relevant customs body.

If cargo transportation poses a threat to the lives and health of people, railway traffic and environmental safety, the cargo destination shall be changed without the consent of the customs body. The railways shall be liable for informing the customs body of the above.

Article 31. Date of Delivery

1. The Railways shall be liable for the delivery of cargo to the place of destination on the agreed dates of delivery. Terms and rules for their calculation are specified by the cargo transportation Rules and existing international agreements. The parties shall have the right to change the date by concluding a new agreement.

2. The date of cargo delivery shall be calculated from 24 hrs of the date of receipt of cargo to be transported. The date of receipt and the date of expiry of delivery term shall be indicated in the documents issued by the sending station to the consignor and certifying the receipt of cargo.

3. Cargo shall be considered to be delivered on time if the railway car (container) loaded with such cargo is delivered to the place of discharge in the station of destination before the expiry of delivery date.

Cargo shall be considered delivered:

•when it is delivered to the station of destination before the expiry of delivery date but its supply to the place of discharge is delayed by the consignee due to occupying discharge area and failure to pay transportation fees and other dues to the Railways

•when cargo (railway cars and containers) delivery to the station of destination is delayed due to occupying railroad (discharge front) by the consignee, also the railroad of the station of destination and the Railway is forced to hold cargo in the adjacent of neighbouring stations.

Cargo shall be considered to be delivered on time where the delay is caused by the consignee.

In all cases of delay of delivery a general report shall be drafted. In case of failure to deliver cargo on time the Railways shall be liable for the payment of fine under Article 53 of this Code.

4. Under cargo transportation Rules the Railways shall be liable for informing the consignee on the arrival of cargo.

Where the Railways fails to Inform the consignee due to reasons caused by the consignee the responsibility for the waiting time of cars and containers and cargo storage shall be borne by the consignee.

Where the Railways fails to inform the consignee on the arrival of cargo, the latter shall not be liable for the delay of cars and containers and shall not be liable for the payment of cargo storage charges until it receives the notification on arrival of cargo.

5. The Railways shall be liable for informing the relevant customs body on the arrival of cargo subjected to customs control.

6. The Railways shall notify the consignee on the arrival of cargo subjected to customs control no later than 2 hours before the time for supplying railway cars (containers) for discharge.

7. On the basis of a contract the Railways may provide preliminary information to the consignee, on the arrival of cargo addressed to the consignee.

Article 32. Issue of Cargo

1. Cargo shall be issued to the consignee mentioned in the Bill of Lading in the station of destination after all the transportation charges are paid to the Railways.

The consignor shall confirm the receipt of cargo by signing the Railway Book.

Where the consignee evades the payment of transportation fee or other due charges to the Railways, the Latter shall have the right to hold the cargo and notify the consignor in writing;

the consignor shall be liable for the disposal of cargo within 4 days from the receipt of notification.

Where the consignee fails to take relevant measures for the payment of transportation fee and other charges and if the consignor fails to dispose cargo, the Railways shall sale the cargo except:

•special cargo (including military) required for the purposes of the state and defence;

•cargo the transportation fees and charges of which are covered in compliance with the requirement of Article 27 of the this Code.

In case of sale of cargo confiscated by customs and other state control bodies; also in case of sale of cargo which was refused by the consignee in the name of the state (consignor).

The above bodies pay the railways the transportation fees and other charges from the income resulting from the sale cargo of this

2 If the consignee receives cargo not foreseen in the contract, also cargo the name of which does not correspond to the on indicated in the Bill of Lading, the consignee shall be liable for its receipt from the station and shall be responsible for its storage until the matter is clarified with the consignor.

The consignee shall refuse the receipt of cargo if its quality is so changed due to decay or damage that its full or partial use is impossible

If the decay and damage of cargo is caused by the failure of the consignee of forwarder to discharge the railway car on time or failure to remove cargo from the station due to the delay caused by the consignee, the pecuniary responsibility shall be borne by the consignee of forwarder.

3. While receiving cargo in the areas of general use, the consignee shall be liable for the receipt and taking out of cargo from the station.

4. For technological difficulties in railway stations caused by untimely discharge, of cargo and the failure of the consignee to take out cargo from the station, the Railway administration, if the agreement does not provide otherwise shall increase:

•the changes for storage of discharged railway cars (containers) fivefold;

•the fees for the use of cars (containers) twofold. The increase of the above fees and changes shall be introduced in 24 hours after the written notification of the consignee.

Article 33. Rule for the Issue of Cargo

1. The rule for the issue of cargo shall be defined on the basis of cargo transportation Rules.

2. Cargo shall be stored free of charge in the station of destination for 24 hours.

This period shall be calculated by the Railways from 24 ors of the date of discharge from railway (container) facilities supplied by the Railways of from 24 hrs of the date of cargo delivery to the place of discharge in railway (container) facilities belonging to the consignee.

For the storage of cargo during the period longer than above, the consignee (forwarder) or body providing transportation shall pay Railways the change stipulated in the Tariff Guides.

The rules and terms of cargo storage in the railway station shall be defined in accordance with the Rules of railway cargo transportation.

3. While issuing cargo in the station of destination the railways examines its condition, volume and number of units if:

•cargo is received in unsuitable railway cars (containers), also with damaged seals or seals pertaining to other railway stations (on the way).

•cargo is received has signs of damage or loss while transported in open cars (containers)

•perishable cargo is received at the place of destination later than expected or in refrigerator cars with lower temperature than required.

•cargo addressed to the Railways

•cargo discharged by the Railways in the areas of general use is issued.

In cases indicated in this Article or in situations which may affect packaged or other cargo, the Railways, while issuing cargo shall examine the volume and condition of cargo in damaged containers and packages only.

4. While issuing cargo in the stations of destination, the presence of customs seals on railway cars and containers shall give the grounds to the Railways examine the conditions of cargo, its volume and number of places, except for cases indicated in this Article.

5. The volume of cargo while its issue shall be examined similarly to its examination while loading. If the consignee and the station of destination do not have scales for weighing railway cars, loose and bulk cargo having arrived without signs of loss, shall be issued in the station of destination without examining their volume.

The volume of cargo shall be considered acceptable if the difference between the volume determined in the sending station and the volume determined in the receiving station does not exceed the norm of natural loss and the norm indicated on the volume (net) determining facilities.

On the request of the consignee the Railways, on the basis of contract provisions, shall take part in the examination of volume and condition of cargo and number of cargo places.

6. If while examining the volume, condition and number of cargo places, shortage or damage (decay) is determined, or if this is determined by the railway station on the way and is

recording its commercial report of the station of destination shall e liable for the determination of actual amount of shortage and damage and provide the consignee with a commercial report.

If need be the Railways, on its initiative on the consignees request, shall involve experts and relevant specialists.

Article 34. The Obligations of Consignors and Consignees after Discharge

1. After discharge, the railway cars (containers) shall be cleaned from inside as well as outside; fastening facilities shall be removed also fastening facilities permanently fixed to cars (containers) , including turn-stiles shall be put in proper order.

Doors and hatches shall be locked:

•by the Railways if the discharge is carried out using the facilities of the Railways

•by the consignee (forwarder) if the discharge is carried out using the consignee's facilities.

2. The cleaning washing and if required, disinfecting the remains of animal, poultry, raw organic produce and perishable cargo shall be carried out using the facilities of the Railways, at the expense of the consignee.The main requirements and criteria for cleaning the railway cars (containers) are defined by the Rules of railway cargo transportation.

3. After all decayed and dirty cargo has been discharged the railway cars are washed by consignees. The number of cars/containers to be washed is determined under the Rules for railway cargo transportation.

If consignees cannot wash railway cars, they shall be washed by the Railways, on the basis of a contract.

For the breach of provisions of this Article the Railways shall have the right not to accept railway carriages (container) after discharge until these conditions are met.

In such cases the consignee shall be liable for the payment of fees for the whole period of their use and holding up.

Article 35. Impossibility of Cargo Delivery to the Place of Destination

Where due to force majeure, also natural calamities (fire, snow, snowdrift, flood etc.) and military activities, blockade, epidemics an other emergency situations, further transportation of cargo, baggage and cargo baggage is burdened and the Railways fails to deliver and issue cargo to the consignee, also if the term for storage of cargo, baggage and freight expires due to the above reasons the Railways shall apply to the consignor and consignee for instructions for further disposal of cargo.

Where the consignor and consignee fail to decide on the disposal of cargo, baggage and freight in 4 days after the request from the Railways, the latter shall return cargo, baggage and

freight to the consignor, or sale the cargo, baggage and freight in conformity with reasons for non-return stipulated in this Article.

2. Where the consignor breaches the requirements for export cargo resulting in the detention of such loaded railway carriages and containers by the customs or other bodies responsible for state control, and impossibility to delivery of cars and containers to be transported by maritime transport or foreign railways, the consignor shall pay the Railways a fine for the delay of cars and containers totalling 45 and 15 of minimum remuneration.

If within 10 days due to the above reasons no measures concerning the cargo delayed due are taken by the consigner cargo delayed.

If within 10 days the consigner fails to take measures concerning cargo delayed due to above reasons, also if within 4 says after the receipt of notification on the detention of perishable cargo no measures are taken, the Railways shall return cargo to the consigner at the latter's expense or sale it, if the cargo transportation contract does not provide otherwise. Consignee responsive for holding railway cars (containers) in the station longer than agreed, shall bear pecuniary responsibility under Article 56 of this Code.

3. Decisions on the sale and request for insuring cargo shall be made by the Head of administration of the Railways. In cases covered by item 1 of this Code, cargo, baggage and freight shall be sold on the decision of the executive body in charge of transport.

In cases provided by this Code cargo, baggage and freight shall be sold by the Railways on the basis of purchase-sale agreement and at the price confirmed by the document of settlement or by the relevant agreement, if such document does not exist; or shall be sold at the price which is normally paid for such items purchased in similar circumstances

The rules for registration and payment of cost for the cargo to be sold shall be defined by the Executive body in charge of transport.

4. Income generated from the sale of cargo, baggage and freight minus railway charges and expenditure related to the sale of cargo, baggage and freight, except for cases provided in Articles 47 and 52 of this Code, shall be subject to transfer to the consignee mentioned in the transportation documentation in cases the latter has paid (confirmed by relevant documents) the cost of cargo, baggage and freight, in all other cases the income shall be transelfed to the consigner.

If due to reasons beyond the responsibility of the Railways it is not possible to transfer the above funds to the consigner (consignee) these funds are subject to transfer to the State budget after the tern of statement of claim expires.

The amount generated from the sale of cargo, baggage and freight by the Railways, not backed up by documentation, shall be transferred on the deposit of the Department of Railways to cover the cost paid by the Railways for cargo, baggage and freight that not reached the place of destination.

Part V
Access Railroad

Article 36. Access Railroad

Access railroads serve the needs of separate enterprises and organisations, are linked to the general railway network through a continuous rail and belong to:

a) consigners, consignees and other industrial entities;

b) the Railways.

Access railroad shall be linked to the Georgian railways network on the permission of the Railways authorities, after this is agreed with local governance bodies.

2. The building and reconstruction of access railroads, loading, discharge and cleaning facilities shall be carried out on the agreement with the railways and if need he, with the local governance bodies.

The construction and condition of access railroad, railroad facilities and technical buildings shall comply with construction norms and rules and shall ensure that the transit of railway cars through the railroad of general use carried out in full conformity with technical norms of load capacity; the condition of access railroad while servicing railway locomotive shall ensure the transit of locomotives assigned for this purpose by the Railways.

Access railroads of organisations not belonging to the Railways shall be given to the Railways also for technical maintenance on the basis of a contract.

3. Opening of a newly constructed access railroad for permanent exploitation and supply of rolling stock for such railroad shall be permitted only after the Commission comprising a representative of the Railways approves putting it to service and the Railways on the agreement with the owner of the given railroad, defines the Rules of its maintenance.

Every access railroad shall have a technical passport, sketches of constructions, plan and a longitudinal section.

4. Access railroads, their constructions and facilities shall ensure regular loading – discharge of cargo, shunting depending on the volume of transportation, also effective use of rolling stock.

Access railroads under construction shall be linked to the existing access railroads:

– on the permission of the Railways if the access railroad belongs to the latter.

– on the permission of organisations or natural persons to whom/which the access railroad belongs; the Railways shall be notified of this in writing.

Article 37. Exportation of Access Railroad

1. The relations between consigners and consignees having the access railroad shall be regulated on the basis of the agreement on the exploitation of access railroad the form and contents of which shall be determined by the Railways administration.

2. The rules for transit of rolling stock not belonging to the Railways shall be specified by the Railways administration.

3. Personnel whose activities are related to the transit and shunt of trains on the railroads of general use, shall be examined to see their knowledge of rules for technical exploitation of railways, movement of trains and security alarm system.

Personnel responsible for loading, fixing and discharge of cargo shall be tested in the knowledge of technical conditions of placement and fixing of cargo in the rolling stock. The rules for examining the knowledge of personnel shall be determined by the executive body in charge of transport.

4. The relevant representative of the Railway administration with the participation of the owners of the access railroad, consigners and consignees, shall examine the observance of traffic security, rolling stock safety and condition of railway facilities on the access railroad.

In case of discovering imperfections on the access railroad, which pose a threat to railway traffic and safety of rolling stock, the Commission (with the participation of access railroad) shall draft a report. On the basis of the report the Head of railway station and traffic security inspector shall forbid the supply of rolling stock to the railroad (railway stretches) indicated in this report.

The pecuniary responsibility for the failure to comply with the requirements related to the delay of railway cars, their supply, cargo safety fulfilment of application for cargo transportation shall be borne by the owner of closed access railroad or its stretch.

5. The supply and shunt of railway cars to the access railroad belonging to consigners (consignees) shall be provided by the consigner (consignee) if the latter owns locomotives.

If the consigner (consignee) does not own a locomotive, the supply of railway cars and shunt shall be provided by the locomotive of the Railways on the payment of fees specified by the agreement.

6. The relations of the Railways with organisations, natural persons, enterprises having warehouses and cargo platforms alongside access railroad belonging to the Railways shall be regulated on the basis of the agreement on the supply of railway cars. Its form and contents shall be defined by the Railways administration . In such cases the supply of railway cars and shunt shall be provided by the locomotive belonging to the Railways on the payment of charges specified by the agreement.

Cleaning access railroad from litter and snow, and its illumination within the territory of enterprises shall be provided at their expenses.

The agreement on the exploitation of access road and supply of railway cars shall be elaborated to take into account the operating technology of the railway station and access road linked to it. The agreement specifies the rules for the supply of railway cars, and terms of their turnover.

7. The rules for servicing consigners (consignees) having the second consigner (consignee) or sub-client within one access railroad, also have their warehouses and railroads linked to them, shall be provided by the agreement between the sub-client and consigner (consignee) owning the access railroad and the locomotive providing services on this road.

8. While providing services on the access railroad using its own locomotive, an agreement between the Railways and the sub-client shall be concluded on the supply of railway cars . The form and contents of a typical agreement shall be defined by the Railways. The sub-client shall pay due charges for services for the supply of railway cars and shunt.

9. The organisation owning access road, consigner, consignee and sub-client shall bear pecuniary responsibility for the damage of rolling stock and failure to ensure its safety on the access railroad.

The owner of access road and its sub-client shall have equal obligations and responsibilities for cargo transportation.

10. On the agreement of consigner (consignee) and the owner of the access road, the Railways shall, according to the agreement, use their access railroad for shunt and temporary parking of railway cars.

For unauthorised use of access railroad owned by the Railways and situated on the territory of the consigner (consignee) the Railways shall bear pecuniary responsibility for unauthorised use of railway cars (containers) under Article 54 of this Code.

11. The size of land plots and occupied by juridical and natural persons on the territory under access railroad situated in the right of way; also charges for their maintenance shall be provided in the agreement on access road exploitation and railway car supplies. In conformity with the agreement, the cost of maintenance shall be reimbursed to the railways.

12. The protection of loaded and empty railway cars delivered by the Railways to the access railroad shall be ensured by the recipient and at his expense.

13. The registration of railway cars on the access railroad shall be carried out in the normal way.

14. The time for loading and discharge of cars during the provision of service on the access railroad by the locomotive of the Railways, shall be calculated from the moment of

actual supply of railway cars to the place of loading and discharge until the railway station receives a notification from consigners (consignees) on their readiness.

The time of presence of railway cars on access railroad not serviced by the locomotive of the Railway shall be calculated from the moment of transit of railway cars to easer ?? rails until they return back to these rails.

The conditions, places and rules for the transit of railway cars (containers) to and from the access railroad and ease rail shall be defined by the agreement.

The consigner, consignee and the Railways shall not use for the transportation and storage of their cargo without authorisation if this is not provided by the agreement. The side breaching this requirement shall bear pecuniary responsibility under Article 54 of this agreement.

15. Agreements on the exploitation of access railroad and supply of cars shall be concluded for 5 years.

This agreement shall be signed by the Head of the Railways administration or, on his instruction, the Head of railway Station and the owner of the railroad.

16. If the equipment of work technology of railway station or access railroad is changed the agreements on the exploitation and supply of railway cars shall be reviewed before the expiry of their term.

Disputes related to the agreement shall be considered and settled by the Railways administration and the owner of access railroad.

If the sides fail to agree disputes shall be considered according to the established rules provided by the Georgian legislation. Disputes related to railway traffic security, safety of rolling stock and containers shall be decided by the Head of the Railways administration.

Until disputes are settled, all relations between the sides are regulated by the previous agreement.

PART VI
DIRECT MULTIMODAL TRANSPORT COMMUNICATIONS

Article 38. Direct multimodal transport communications

1. Cargo transportation by railways may be provided through interaction with sea, river, air and motor transport creating a system of direct multimodal transport communication.

2. Cargo transportation within direct multimodal transport communication is provided on the basis of a unified transport Bill of Lading valid throughout the entire cargo transportation route.

3. Rails situated in sea ports and used for cargo transportation within ports and direct multimodal railway-maritime transport, shall belong to the Railways.

The building and reconstruction of railside houses in ports receiving and sending cargo to be transported through direct multimodal railway-maritime transport communication shall be carried out by ports on the basis of plans agreed with the railways and other interested organizations.

The building, reconstruction and development of ports and seaside railway sites (stations) shall be carried out in combination, taking into account the volume of cargo to be processed.

Article 39. Rules for the provision of direct multimodal transportation

1. The rules for organizing cargo transportation within direct multimodal transport communication system shall be determined on the basis of agreements between relevant transport organizations in charge of different types of transport concluded in accordance with the Georgian legislation, also with the articles of this Part on "Direct multimodal Transport Communications."

The Rules for cargo transportation within direct multimodal transport shall be elaborated and approved by the executive body in charge of transport, taking account international agreements in force after they are registered in the Ministry of Justice and published.

Parts of this Code not foreseen by this Article shall use the norms of such codes, regulations, Tariff Guides and Rules which regulate cargo transportation through relevant type of transport.

2. The participants in direct multimodal transportation shall be

- railway stations, motor transport for cargo transportation operations
- sea ports, motor transport stations and airports recorded in the list approved by the executive body in charge of transport

3. Liquid cargo in tank cars and timber floats shall not be accepted for direct multimodal transportation.

The list of perishable and dangerous cargo permitted in direct multimodal transportation also lists of cargo to be escorted by consignor/consignee representatives shall be determined in conformity with the Rules for direct multimodal transportation

4. For cargo sealed in railway cars the compatibility of names and integrity of seals in point of loading with data indicated in the transportation documents shall be examined

Cargo transported by railway-maritime direct multimodal shall be weighed in the places of transshipment on the request of the side responsible for transshipping cargo from one type of cargo to another

- on railway scales - by the Railways
- on cargo scales - by the port.

The cargo volume shall be examined by the side responsible for loading and discharge of railway cars in the points of transshipment, in the presence of representatives of the next transport to be used.

Packaged or separate cargo that is received in transshipment points in closed or open rolling stock and undamaged packages, also if the consignor indicates the volume per cargo unit, the transshipment of units shall be carried out without weighing this cargo, by counting units.

The same rule shall apply for the issue of cargo at the place of destination.

Cargo transportation in containers shall be issued after the condition of container and integrity of seals shall be examined.

5. While using containers in directs and mixed transportation the rules and conditions for assigning and use of containers hall be established on the basis of agreements concluded with relevant transportation organizations.

Article 40. Rules for the handover of cargo and preparation of means of transport in the points of transshipment

1. Where transported by direct multimodal transport cargo shall be loaded by:

- the port - transshipments from ships and port warehouses to railway cars and from railway cars to ships and port warehouses.
- the railways - transshipments from railway cars and railway station warehouses to motor cars and from motor cars to railway station warehouses

Ports shall ensure that railway cars and ships are equipped to transport cargo in several tiers;

placement and fastening of heavy cargo and cargo of excessive length and volume shall be carried out by ports.

The supply of fastening and fixing facilities, packaging materials and other materials shall be provided by the consignor.

The cost of works (including expenditure on materials) shall be indicated in the Bill of Lading and paid by the consignee.

Article 41. Joint Framework Agreement

1. The conditions for the operations of railway stations, ports and other transport organizations participating in direct multimodal transportation shall be determined by joint framework agreement concluded for 5 years on the basis of rules of direct multimodal transportation. In case of change of equipment or operations technology, the framework agreement shall be reviewed on the request of one of the sides, before the expiry of its term.

The rules of elaboration and conclusion of joint framework agreement shall be established under the rules of single and direct transportation.

2. Disputes based on joint framework agreement shall be considered in conformity with the Georgian legislation.

Article 42. Terms of delivery and settlements. Responsibility of the sides

1. The terms for cargo delivery through direct multimodal transportation shall be defined on the basis of terms of cargo delivery by railways and other types of transport. Terms shall be defined on the basis of existing rules for determining terms for cargo delivery by specific type of transport.

The pecuniary responsibility for breaching the total term of cargo delivery shall be borne by the side responsible for the breach.

2. The payment of charges for railways-maritime cargo transportation shall be made in.

- sending station - by consignor and according to the distance of transportation by railways
- port of transhipment or destination - by consignor or consignee according to the distance of transportation by sea

3. The payment of charges for railways-maritime cargo transportation shall be made in:
- sending station - by the consignor according to the distance of transportation by sea
- station of transshipment by the consignor or consignee according to the distance of transportation by railways

Cargo transportation charge may be paid by the forwarder acting on behalf of consignor or consignee.

Fees for the supply of railway cars in ports by locomotives shall be paid on the basis of provisions of Tariff Guide.

4. Registration of fulfillment of established norms for cargo transshipment from railways to maritime transport and vice versa shall be made through registration cards filled in according to modes of transport

5. For the failure to fulfill the norms of direct multimodal railways-maritime transportation, the pecuniary responsibility shall be borne by the Railways and the port under Article 51 of this Code. The failure to fulfill the application on cargo transpiration shall be accounted for under the same Article.

6. The Railways and ports shall be exempt from pecuniary responsibility for the failure to comply with transportation norms:
- when transshipment operations are forbidden due to force majeure conditions such as military actions, blockade, epidemics or other emergency situations hindering transshipment operations; also while accidents in transport organizations;
- when discontinuing or limiting cargo transportation according to established rules;
- when in accordance with monthly figures transshipment norms are met

7. Where railway cars (containers) supplied to the port for unloading, discharge or transshipment are delayed at the fault of the port, also where demurrageing railway cars (containers) waiting to be supplied at seaside railway stations or access rails (in cases when the station is unable to receive them) the port shall pay to the Railways the charges for the use of railway cars (containers) and fees for cargo storage.

8. Where ships in ports are excessively delayed due to the failure to supply railway cars, the Railways shall bear pecuniary responsibility under Article 56 of this Code, where ships are discharged before due time, the bonus shall be shared by the port and the Railways.

9. Where at the points of transshipping the dispatch of the railway cars (containers) is delayed at the fault of the consignor, the latter shall pay a fine in the amount determined in Article 56 of this Code.

Where at the border guards and customs checkpoints the dispatch of the railway cars and containers loaded with export and import cargoes is delayed at the fault of the customs and border guards, these latter shall pay a fine in the amount determined in Article 58.

10. Where the cargo is not placed in safe conditions, the liability for damages at the points of transshipping shall lie with the transferor—before the transfer of cargo and the transferee—after the transfer of cargo.

At seaports the safety of both loaded and empty railway cars shall be ensured by the seaport administration.

11. At the points of transshipping the seals and locks shall be removed from the transshipping railway cars, or at the points of transshipping the seals and locks shall be placed on railway cars loaded with direct multimodal transportation cargoes according to the multimodal transportation procedures.

12. Where the safety of cargo designated for direct multimodal traffic is not ensured, the railway and other carriers shall be liable to damages according to regulations and codes of appropriate transport carriers.

Where the cargo is lost, destroyed, damaged or spoiled and the guilt of railway, sea carriers, or seaport is established, the liability for damages shall lie with railway, sea carrier or seaport accordingly.

PART VII.

TRANSPORTATION OF PASSENGERS, BAGGAGE, FREIGHT AND MAIL

Article 43. Principles of transporting passengers, baggage and freight

1. The Railways shall ensure that the passengers, baggage and freight are delivered to the places of destination in timely manner, the safety of passengers, baggage and freight is guaranteed and the passengers are provided with high-quality services in railway stations and trains.

The railway shall ensure that the passenger train traffic corresponds to the schedule. The passenger carriages, railway stations and other facilities shall be in good technical conditions and correspond to the requirements of construction and sanitary standards, rules and regulations.

2. Passenger trains shall fall into the following categories:

- depending on the distance—long-distance, local and suburban trains.
- depending on the speed—express and passenger trains;

Criteria for the classification of trains into categories depending on their speed and distance of travel shall be determined by an executive authority in charge of transport.

3. Railway stations which are opened for providing passenger, baggage or freight transportation services, shall meet such requirements which can ensure the providing of these services.

In the railway stations there shall be constructed platforms, store-rooms, pavilions, and—for pedestrians—tunnels and bridges

The railway stations shall contain booking offices, baggage check-in points, carry-on-baggage check-rooms, waiting halls, inquiry offices, transit passenger rest-rooms, mother and child rooms, restaurants and cafes, entertainment and sanitary/hygiene service rooms which shall correspond to established technical/design standards.

The railway station squares which do not belong to the Railways shall be comfortable and shall fit the requirements of pedestrians and the safe and convenient traffic of the public transport.

The local self-governments shall be responsible for the development of railway station squares.

The construction, maintenance and rehabilitation of railway squares shall be implemented by the budgets of the Railways and local self-governments.

4. The passengers shall be provided with timely and reliable information concerning the train departure and arrival times, locations of booking-offices, check-room working hours, locations of warehouses, benefits for certain categories of passengers, as well as the procedures of transportation of passengers, personal belongings of individuals, baggage, and freight.

Article 44. Passenger and cargo transportation contract

1. By entering into a passenger transportation contract the railway commits itself to carrying passengers to the place of destination and ensuring room according to the passenger's ticket, as well as to carrying the passenger's baggage or the forwarder's freight; on the other hand, the passenger commits himself or herself to paying for travel cost and—where he or she checks baggage—the baggage transportation cost; the forwarders commit themselves to paying for the freight transportation costs. All transportation costs shall be paid in accordance with established tariffs.

2. The fact of making a passenger transportation contract shall be evidenced by a travel document (ticket). The check of baggage or freight by a passenger or forwarder shall be evidenced by baggage or freight bills respectively.

3. The passengers are required to carry with themselves travel documents (tickets) and the Railways are required to sell tickets at established tariffs as long as the seat is available, provided that certain categories of the citizens of Georgia may enjoy benefits established by law.

Where the benefits are provided to the certain categories of the citizens of Georgia in regard to travel costs, the compensation for such benefits shall be covered by the State budget funds or those of appropriate entity of Georgia.

4. Lost or damaged travel documents (tickets) of the passengers may not be changed, except for cases specified in passenger, baggage and freight transportation regulations, and the amounts paid for such documents shall not be given back.

5. Railway station check-rooms shall accept and keep carry-on-baggage and baggage whether or not the persons who carry them have got travel documents (tickets), except such items and materials whose transportation is prohibited by passenger, baggage and freight transportation regulations; the passengers are required to pay fees for the services provided by the check-rooms.

Transit passengers may enjoy the preferential right in terms of the use of check-rooms.

Article 45. Rights and duties of passengers

1. During the travel by long-distance and local trains a passenger shall have the right:

- to buy a travel document (ticket) to any train and carriage, to the station of destination of his or her choice, provided this station is open for train traffic;

- to carry at no charge one child under the age of 5 years, provided the child should not occupy a separate place, and children from 5 to 10 years according to established tariffs;

- to carry a carry-on-baggage excluding small items, whose quantity and weight shall be specified in passenger, baggage and freight transportation regulations;

- to check baggage for transportation as required by the travel document and pay for baggage fare according to established tariffs;

- to make a stop in the way and extend the travel document for not more than 10 days;

- where he or she becomes ill in the way, to extend the travel document for the whole period of illness certified by a medical organization; if there is no seat available in his or her train, such a seat shall be reserved for him or her in the next train;

- to travel by a preceding train after checking with the railway booking-office;

- where the train is late, within 3 hours, and where the passenger has been ill or an accident has taken place (provided an evidence is submitted), within 3 days after the pulling out of the train to which the passenger has acquired a travel document (ticket), to extend his or her travel document (ticket) to another train by paying an additional amount for berth, or, where he or she abstains from travel, to recover the cost of travel excluding the cost of berth.

2. Where a passenger turns in an unused travel ticket, he or she shall have the right:

- not later that 15 hours prior to the departure of the train, to recover the ticket cost consisting of both ticket and berth costs;

- where he or she turns in the ticket from 15 to 4 hours prior to the departure of the train, to recover the ticket cost entirely plus 50 per cent of berth cost;

- where he or she turns in the ticket less than 4 hours prior to the departure of the train, to recover only the ticket cost. The cost of berth in such a case will not be given back;

- where he or she, not later than 24 hours prior to the departure of the train, turns in the return travel document (ticket) to the same booking-office where it was bought, to recover both ticket and berth costs; where this happens later than 24 hours, but still prior to the train's departure, he or she may recover the ticket cost excluding the berth cost;

- where the return travel document (ticket) is turned in to a station from which the passenger is going to return, the rule of this article shall be applied.

3. Where a travel document (ticket) is to be turned in at any time prior to the departure of the train, the passenger shall be given back the travel cost:

- in cases of the cancellation of trains, delay of departure, the passenger's illness, or impossibility to provide a seat indicated in the travel document (ticket) and the passenger's refusal to occupy any other seat instead. Where a travel document is returned, no deductions shall be made from the travel cost, provided the passenger is late in the station of train change for the railway's reason.

4. Where a travel is interrupted, a passenger may recover the travel cost for the uncovered distance excluding the cost of berth. The amount shall be given back to the passenger according to the passenger, baggage and freight transportation regulations.

5. Where the travel is interrupted for the reasons which are beyond the control of the Railways, a passenger shall be given back the travel cost for the uncovered distance; where the interruption is caused by the Railways' fault, the passenger shall be given back the whole cost of travel.

6. A passenger shall have the right to occupy an unoccupied seat in a higher class carriage according to the passenger, baggage and freight transportation regulations.

7. Where it is impossible to provide a passenger with a seat indicated in the travel document (ticket), the Railways shall provide such a passenger, if he or she agrees, with a seat in another carriage, including higher class one, without charging a difference.

8. Where a passenger is provided, by his or her consent, with a seat whose cost is less than the cost of the travel document (ticket) bought by this passenger, the difference shall be paid back to the passenger.

9. In the event of the travel by a suburban train, a passenger shall have the right to buy:

- a one-way or round-trip ticket or a multiple-use ticket of an established format;

- to carry at no charge children under the age of 5 years;

• to carry a carry-on-baggage whose size and weight shall be specified in the passenger, baggage and freight transportation regulations.

10. Passengers are required to maintain a public order, comply with the rules of using passenger carriage and railway station spaces, and take care of the railway transport organizations property.

Article 46. Carrying passenger groups

1. At the prior request of organizations, the Railways may sell travel documents (tickets) to passenger groups.

2. Prior requests of organizations for the reservation of travel documents for passenger groups shall be accepted, travel documents shall be handed out and, in the case of refusal to travel, the ticket costs shall be given back according to the passenger, baggage and freight transportation regulations.

3. Where the tickets acquired at the prior request of organizations are turned in to the railway booking-offices not later than 3 days prior to the departure of the train, 50 per cent of the berth cost shall be deducted and where the tickets are turned in less than 3 days prior to the departure of the train, the berth cost shall be deducted in its entirety.

Article 47. Carrying baggage and freight

1. Upon the showing of travel documents (tickets) by the passengers, the Railways are required to accept baggage and depart it by a train of appropriate destination, provided this train contains a baggage van.

2. The passengers may check for transportation declared valuables.

For the check of declared valuables the passengers shall pay fees.

The freight shall be carried according to this Code and the passenger, baggage and freight transportation regulations.

3. For the purposes of transportation there shall be accepted such items which because of their size and qualities may be placed into the cargo truck and which will not cause damage to the baggage of other passengers. Requirements for the baggage weight and packaging shall be specified in the passenger, baggage and freight transportation regulations.

The transportation of dangerous materials specified in the passenger, baggage and freight transportation regulations is prohibited.

4. A delivery period of baggage or freight shall be determined by the travel period of the train by which the baggage or freight is sent to the railway station of destination.

The date of sending the baggage or freight shall be fixed in transportation documents.

Where the baggage or freight should be transshipped on the way, the delivery period of baggage or freight shall be determined by the travel period of the other train which should contain a baggage van. Besides, one day shall be added for the transshipping of baggage and two days for the transshipping of freight.

The station of destination shall fix the date of arrival of baggage or freight in transportation documents.

Where the baggage or freight has not arrived in the railway station of destination 10 days following the expiration of the travel period, it shall be considered lost and its cost shall be paid off.

5. Where the baggage or cargo baggage arrives in the railway station of destination after the expiration of the above mentioned period, the consignee may receive the baggage or freight and refund the Railways the amount which was paid to the consignee for the loss of baggage or freight as provided hereby.

Where within 4 days after the consignee has received a written notice of the arrival of baggage or freight in the railway station of destination, the consignee refuses to receive the baggage or cargo baggage or has not decided what to do with this baggage or freight, the Railways may sell the said baggage or freight according to the rule provided by this Code.

6. In the railway station of destination the baggage shall be handed out to a bearer of baggage bill and a travel document (ticket).

The handing out of baggage shall take place over the whole period during which the railway station is open for the performance of baggage receipt/hand-out operations. The baggage arrived in the railway station of destination shall be kept in the station free of charge during 24 hours after arrival excluding the date of arrival. Where the baggage is not taken away after the expiration of this period, an extra amount shall be paid as determined by the passenger, baggage and freight transportation regulations.

7. Where a baggage is not taken away within 30 days after the date of arrival, or a freight of natural persons is not taken away within 30 days after the giving of written notice of the arrival of baggage-cargo, or a freight of legal persons is not taken away within 10 days after the giving of written notice of the arrival of baggage-cargo, this baggage or baggage-cargo shall be sold according to the hereby specified rule.

Article 48. Carrying mail parcels

1. The Railways shall carry mail parcels on the basis of contracts entered into with the appropriate communications and post companies, according to which the Railways shall receive and deliver the mail to the place of destination in time and without any loss and the communications company shall provide the mail parcels in time, load them into the mail van, pay the delivery costs and receive the mail in the place of destination.

2. The transportation of mail by railway shall be carried out by the mail railway cars included in the train and the rout shall be determined by the Ministry of Communications and Post in coordination with the Railways

3. The rules of transportation of mail parcels and inclusion of mail vans into the trains shall be determined by the executive authority in charge of transport in cooperation with the executive authority in charge of the communications.

Article 49. Mail, cable and telephone services provided to passengers

1. The Railways shall lease out appropriate space of the railway stations to mail, cable and telephone communications companies to provide services to the passengers.

2. The construction of mail offices and special mail delivery departments out of the railway stations, as well as railway tracks, special lines, tunnels, mail classification areas, platforms and other facilities required for the performance of mail services shall be carried out by the funds of the executive authority in charge of the communications. Construction works shall be carried out by such companies or organizations who have acquired the licenses for the construction of transport facilities. Sites for such constructions shall be allocated in the areas directly adjacent to the railway stations.

PART VIII
LIABILITIES OF RAILWAYS, CONSIGNORS, CONSIGNEES AND PASSENGERS

Article 50. Liability

The parties shall be liable to penalties provided by this Code and the contract entered into by the parties, unless the provisions of such a contract contravene this Code.

Any contracts entered into by the Railways and consignors, consignees or passengers which may restrict or avoid the liability for damages to be paid by the Railways, consignors, consignees or passengers shall be considered null and void and any notes in the transportation documents which are not provided by this Code or any other regulations of Georgia shall be invalid.

Article 51. Liability of forwarder for the failure to provide means of transportation and liability of consignor for the failure to use such means of transportation

Where the Railways fail to provide railway cars (containers) after the receipt of application for the transportation of cargo, or the consignor fails to bring cargo and use provided railway cars (containers), or the consignor refuses to use such railway cars (containers), they shall be liable to the penalty which shall amount:

- in relation to cargo which shall be measured by the number of railway cars and metric tons, to 0.1 per cent of the minimal salary per ton;

- in relation to cargo which shall be measured by the number of containers, 0.5 per cent of the minimal salary per container with the gross weight up to 5 tons; a full amount of minimal salary per container with the gross weight from 5 to 10 tons; a double minimal salary per container with the gross weight over 10 tons;

- in relation to cargo which shall be measured by the number of railway cars only, except refrigerators and conveyors, irrespective of their types or the number of axles, to five times minimal salary per van.

Where the Railways fail to provide refrigerators or conveyors after the receipt of application for the transportation of cargo, or the consignor fails or refuses to use such refrigerators or conveyors, the Railways or consignor shall be liable to the penalty which shall amount:

- in relation to cargo which shall be measured by the number of railway cars and metric tons, to 0.2 per cent of the minimal salary per ton;

- in relation to cargo which shall be measured by the number of railway cars only, irrespective of their types or the number of axles, to seven times minimal salary per van.

The Railways shall be liable to damages where they fail to provide railway cars (containers) after the receipt of application for the transportation of cargo, except when the failure to provide railway cars (containers) is caused by fault of consignor.

Where the consignor fails to ship to the Railways the cargo which should be transported to the place or station of destination indicated in the application, including the case when the application has completely been satisfied, the consignor shall pay the Railways:

- in relation to cargo which shall be measured by the number of railway cars and metric tons, to 0.04 per cent of the minimal salary per ton,

- in relation to cargo which shall be measured by the number of railway cars only, irrespective of their types or the number of axles, to double times minimal salary per van;

- in relation to cargo which shall be measured by the number of containers, 0.2 per cent of the minimal salary per container with the gross weight up to 5 tons; 0.4 per cent of minimal salary per container with the gross weight from 5 to 10 tons; a full amount of minimal salary per container with the gross weight over 10 tons.

In relation to cargo which shall be measured by the number of railway cars only and shall be carried on the narrow railway track, the failure to perform the cargo transportation application shall be subject to 50 per cent of the penalty specified in this article.

The penalty for the failure to perform the cargo transportation application shall be paid up irrespective of the payment of fees for the use of railway cars (containers).

A consignor shall be exempted from the penalty for the failure to perform the cargo transportation application in the following events:

- force majeure, hostilities;

- interruption or restriction of cargo loading operations as determined in Article 20 of this Code;

- circumstances where the cargo handling operations are prohibited as well as an accident which prevents the consignor from doing business;

- failure to use railway cars (containers) provided for excess cargo without the prior consent of the consignor;

- performance of the cargo transportation application for the cargo, which shall be measured by the number of railway cars and tons.

Where the consignor, due to the compressed loading of cargo, uses less number of railway cars (containers) than is ordered by the application, no penalty shall be imposed for the unused railway cars (containers).

Where the consignor notifies the railway station at least 2 days prior to the loading date that it no longer is willing to use ordered railway cars (containers), the amount of penalty shall be reduced by one-thirds.

The Railways shall be exempted from the penalty for the failure to perform the cargo transportation application in the following events:

- force majeure, hostilities;

- interruption or restriction of cargo loading operations as determined in Article 20 of this Code;

- failure of the Railways to provide railway cars (containers) caused by the failure of the consignor to pay cargo transportation or other charges.

Where the delays in the providing of railway cars (containers) are caused by the loading, discharging, cleaning and washing operations to be performed by the consignors, the Railways shall be exempted from the paying of damages for the number of railway cars (containers) delayed for the above reason.

Article 52. The consignor's liability for the loss, damage, destruction or spoiling of baggage, freight or carry-on-baggage

The Railways shall be liable to damages for the failure to ensure the safety of cargo after they have received the cargo for transportation and have not handed it out to the consignee, unless they can prove that the loss, damage, destruction or spoiling of cargo were caused by the circumstances that were beyond the reasonable control of and could not have been avoided by the Railways, including:

- reasons which are under the control of the consignor or consignee;

- exceptional qualities of cargo which should be transported;

- packaging defects which were not noticed during the external examination of cargo at the moment of its receipt for transportation, or the use of such packaging materials which do

not match the qualities of cargo or existing standards, or the lack of the signs of packaging damage in the way;

- where the dampness of cargo exceeds the established standards.

The Railways shall be exempted form the liability to damages for the loss, damage, destruction or spoiling of cargo, where:

- the cargo has arrived by the railway cars (containers) which are in good condition and are locked and sealed by the consignor, or by open rolling stocks bearing security signs or any other signs certifying that the cargo is secured;

- the cargo was damaged or spoiled for natural reasons where it has been transported in the form of open rolling stocks;

- the cargo was accompanied by a representative of the consignor or consignee;

- the loss of cargo does not exceed the difference between the standard of natural loss and the net weight;

- the loss, damage, destruction or spoiling happened because of incorrect, incomplete or unreliable data or information entered by the consignor into the railway bill.

In the cases specified in this article, the railway shall be held liable to damages for the failure to ensure the safety of cargo, where the plaintiff can prove that the loss, damage, destruction or spoiling of cargo took place by the Railways' fault.

Where the cargo has not been handed out to the consignee within 30 days following the arrival of cargo in the place of destination at the request of the consignee, or within 4 months following the arrival of cargo as a result of direct or mixed traffic, the cargo shall be considered lost. Where the cargo has arrived in the place of destination after the expiration of the above period, the consignee may get the cargo, provided it refunds to the Railways the compensation paid off according to this Code.

Where the consignee refuses to receive the cargo or has failed to present a decision what it is going to do with the cargo within 4 days following the receipt of notice of the arrival of the cargo, the Railways may sell the cargo according to the rule determined by this Code.

The Railways shall pay indemnity for damage caused to the cargo during its transportation in the following amounts:

- where the cargo is lost or destroyed, a full cost of loss or destruction;

- where the cost of cargo has been reduced due to its damage or spoiling, the amount by which the cost was reduced, or where the damage can not be removed, a full cost of cargo;

- where the cargo is declared and afterwards lost, a declared amount of cargo or such part thereof which corresponds to the lost, destroyed, damaged or spoiled cargo.

The cost of cargo shall be determined by its price indicated either in the accounts of the seller or in the contract, or where the seller's accounts or the contract do not specify the price of cargo, by the price which usually is paid for the same cargo under similar circumstances.

In addition to paying damages, as required by this article, the Railways shall refund the cargo transportation cost and other charges paid to the Railways in proportion to the quantity of lost, destroyed, damaged or spoiled cargo, unless such costs and charges are included in the cost of cargo.

The Railways shall be liable to damages for the failure to ensure the safety of baggage after the receipt of such baggage for the transportation and before handing it out to the consignee, unless they can prove that the loss, destruction, damage or spoiling of cargo baggage caused by the circumstances that were beyond the reasonable control of and could not have been avoided by the Railways.

The damage caused to the baggage during its transportation shall be indemnified by the Railways in the following amounts:

- where the baggage is lost or destroyed—a full cost of the lost or destroyed baggage;
- where the baggage is damaged or spoiled—an amount by which the value of baggage was reduced, or, where the damage can not be removed, a full cost of baggage;
- where the baggage has been declared—a full declared cost of baggage

The cost of baggage shall be determined by its price indicated either in the accounts of the seller or in the contract, or where the seller's accounts or the contract do not specify the price of baggage, by the price which usually is paid for the same baggage under similar circumstances.

In addition to paying damages for the loss, destruction, damage or spoiling of baggage, the Railways shall refund to the consignee the baggage transportation cost and other charges which are due to the consignee and which were paid for the transportation of the lost, destroyed, damaged or spoiled baggage.

The Railways shall be liable to damages for the loss, destruction, damage or spoiling of freight to the same extent as they are liable to damages for the loss, destruction, damage or spoiling of baggage under this article.

The safety and integrity of a passenger's carry-on-baggage is the responsibility of the passenger.

Article 53. Liability for delays in delivering cargo to the place of destination

As far as local traffic is concerned, where the Railways fail to deliver cargo or empty railway cars owned or leased by the consignor or consignee to the place of destination in time, the Railways shall pay a fine for each day of delay at the rate of 5 per cent of the transportation price, provided that total amount so paid shall not exceed 30 per cent of the transportation price.

As far as international railway traffic is concerned, where the Railways or another party to mixed traffic fail to deliver cargo or empty railway cars owned or leased by the consignor or consignee to the place of destination in time, the Railways or such party shall pay a fine as determined by the agreements on the international railway traffic.

The liability determined in this article shall fall on the Railways, unless they prove that the delays took place as a result of the circumstances, disorders menacing to the lives and health of the people or any other reason beyond the railway's reasonable control, as specified in paragraph 4 of Article 20.

The Railways shall be liable to damages for the delays in the delivery of freight to the same extent as they are liable to damages for the delays in the delivery of baggage under this article.

Article 54. Liability for the misuse of the rolling stock

1. Where the consignor, consignee or other organizations misuse the railway cars and containers of the railway transport organizations, or the Railways misuse the railway cars and containers owned or leased by the consignor, consignee or other organizations, the party who is guilty of such misuse shall pay ten times the amount specified in Article 56 of this Code.

Article 55. Liability for the presenting of controlled or dangerous cargo

Where a consignor has failed to indicate in the railway bill a correct name of materials to be carried, or correct instructions to be taken during the transportation of such materials, or correct qualities of the materials, it shall be liable to penalty amounting to five times the transportation cost and the payment of such a penalty shall not exempt the consignor from the indemnity to be paid to the Railways for the damage caused due to the transportation of such materials.

Article 56. Liability for the demurrage of railway cars and containers

1. Where the consignor or consignee is responsible for the demurrage of a van, as stipulated by articles 35, 42, 56 and 31(3) of this Code, the consignor or consignee shall pay 0.2 per cent of the minimal salary for each hour of delay.

Where the Railways are responsible for the delays in providing railway cars for the loading or discharging operations, or removing railway cars from the places of loading or discharge, provided the delivery or removing of the railway cars is the responsibility of a Railways owned locomotive, and such delays contravene van delivery and removal periods, as determined by the railway track use contract, the Railways shall pay to the consignor or consignee a fine amounting to 0.2 per cent of the minimal salary for each hour of delay of each van. The fine shall be accrued from the moment of delay during the whole period of demurrage.

Where the delay concerns tank-trucks, bunker-railway cars, mineral carriers and other special railway cars, the penalty specified in this article shall be doubled and where it concerns refrigerators and conveyors, the penalty shall be tripled.

The delay for less than 15 minutes shall not be counted, while the delay for the period from 15 minutes to one hour shall be considered the delay for one hour.

2. Where a self-propelled vessel is delayed at berth for a longer time than is provided by a multi-partite agreement and such a delay is caused by the failure of the Railways to provide an agreed number of railway cars, the Railways shall pay 0.06 per cent of the minimal salary for each ton of cargo not shipped and each day of delay.

Where the delay concerns a non-self-propelled vessel, the amount of penalty shall be reduced twice as much, and where a vessel-refrigerator is concerned, the penalty shall be doubled.

3. Where in the cases determined by articles 35, 42 and 54 of this Code a consignor or consignee is at fault for the delay of a multi-purpose container, it shall be liable to penalty in the following amounts:

- for the containers with a gross weight less than 5 tons—0.01 per cent of the minimal salary;

- for the containers with a gross weight from 5 to 10 tons—0.04 per cent of the minimal salary;

- for the containers with a gross weight over 10 tons—0.1 per cent of the minimal salary.

4. The consignor, consignee and seaport shall be exempted from the charge for van and container use for the following reasons:

- force majeure, hostilities, blockades or epidemics which caused the suspension of railway traffic, as well as other circumstances under which cargo handling operations are prohibited, also accidents suffered by the consignor or consignee which resulted in the suspension of their businesses;

- where the Railways provide more railway cars or containers than is agreed upon in an access-track use contract and van providing/removal contract.

5. Where the providing of special empty railway cars, as requested in an application, is delayed for the reason of the consignor, the latter shall pay a cost of the use of railway cars for the whole period of delay, at the rate indicated in the tariff guide.

Where the consignor gives a railway station an advance notice of its refusal to use these railway cars, the cost of the use of railway cars shall be calculated by the railway station for the period before the receipt of such a notice.

Where the consignor refuses to load special railway cars provided to it on the basis of its application and where it is impossible that someone else use these railway cars during a given day, the Railways shall have the consignor pay the cost of distance actually covered by these railway cars in order to be driven to the railway station, provided such a distance shall not exceed 300 km.

Article 57. Liability of the parties for other defaults

1. Where a consignor loads an excess cargo into a van or container whose weight exceeds the capacity of the van or container, the consignor shall pay a fine amounting to five times the transportation cost.

Also the consignor shall indemnify the Railways for the damage caused by the accident which may occur in consequence of the overloading of the van or container.

2. In the case of the loss or damage of the railway cars or containers provided by the Railways, the consignor, consignee or other organizations are required to repair such railway cars or containers or pay the Railways a fine amounting to five times the van or container cost calculated according to their value before their loss or damage. In addition, the consignor, consignee or other organizations shall indemnify the Railways for the damage suffered by the Railways due to the loss or damage of the railway cars or containers in relation to such a portion which is not covered by the fine.

3. Where the Railways are at fault for the damage of railway cars or containers owned by the consignor, consignee or other organizations, the Railways are required to repair such railway cars or containers or pay the owner a fine amounting to five times the van or container cost and to indemnify the owner for the damage suffered by it due to the loss or damage of the railway cars or containers in relation to such a portion which is not covered by the fine.

4. Where the Railways are at fault for the loss of railway cars or containers owned by the consignor, consignee or other organizations, the Railways, at the request of the owner, shall provide to it relevant number of railway cars or containers for free and temporary use; and where the lost railway cars or containers are not found and given back to the owner, the Railways, after the end of three months, shall transfer to the consignor, consignee or any other organization which is owner of the lost railway cars or containers, as required by the law of Georgia, the railway cars or containers which had been provided to it on a temporary basis.

The rule of the change of such railway cars or containers which were leased out by the Railways and afterwards were lost or damaged by the Railways' default, shall be stipulated by a lease agreement.

5. Where the Railways, by the consent of the consignor, have provided to the consignor empty railway cars or containers in unclean condition, with open lids, doors or locks, the Railways shall indemnify the consignor for the appropriate cleaning operations at the time agreed upon by the parties.

Where the consignor is in violation of the requirements provided by Article 34 of this Code, it shall pay to the Railways a fine amounting to 45 and 15 times the minimal salary for van and container respectively, unless anything different is provided by the contract. The Railways shall be liable to above damages only in the case, where they have provided to the consignor unclean empty railway cars or containers without the consent of the consignor.

6. Where the departure or arrival of the train in the place of destination is delayed, except for suburban trains, the Railways shall pay a passenger a fine for each hour of delay at the rate of 3 per cent of the travel cost, but not more than the full cost of travel, unless they prove that

the departure or arrival was delayed due to a force majeure, any threat to the lives or health of the people or any other event beyond the reasonable control of the Railways.

The rule of the payment of fine shall be determined by the regulations for the transportation of passengers, personal cargoes, baggage and freight by the railway.

Annex No. 3.

DRAFT

LAW OF GEORGIA "ON RAILWAY TRANSPORT"

The Law "On Railway Transport" determines the economical, legal and organisational basis of railway transport activity, its place and role in the national economy and regulates its relations with passengers, consignees and consignors.

Chapter I

Scope and Definitions

Article 1. Railway Transport in the National Economy

Railway transport is part of a single transport system, that satisfies the needs of the population, enterprises and organisations of the governmental and non-governmental sectors concerning transportation and transit and other services in national and international conveyance, and also carries out military transit based on the charter on railway transport military transit which is confirmed by the President of Georgia.

Private legal persons may implement passengers, consignees and consignors services under rules regulated by legislation.

Article 2. Definitions and Interpretation

In this law:

a) "Railway enterprises" are enterprises which provide railway transport services and/or manage a railway infrastructure.

b) "Transport services" comprise the carriage of passengers or goods on a railway infrastructure.

c) Managing a railway infrastructure includes the building, operation and maintenance of railway track and infrastructure and signalling as well as the management of traffic and security systems.

d) "Railway infrastructure" is the territory of railway transport and includes all routes, rails, signalling, telecommunication and fixed installations necessary for the circulation and safety of traffic and includes also buildings which serve the administration of the railway infrastructure, passenger and goods platforms and buildings in which are found sales and dispatch facilities for the transport of goods and passengers as well as movable and non-movable sales, dispatch and loading facilities provided that they are available to every railway enterprise. Railway infrastructure does not include private sidings.

e) "Private sidings" means railway tracks and associated equipment and buildings used for loading and unloading of freight which belong to the managers of the sidings.

f) "Public service obligations" means obligations which the railway enterprise, if considering its own commercial interests, would not assume or would not assume to the same extent or under the same conditions and consist of the obligation to operate, the obligation to carry and tariff or fare obligations.

g) "Railway joint stock company" means the joint stock company required to be established by Article 3 of this Law.

Chapter II

Reorganisation of the present railway administration.

Article 3. Transitional provisions.

3.1 The present railway administration, immediately upon the enactment of this law, shall become a structural unit within the Ministry of Transport under the competence of the Minister for Transport, and shall then be established as a joint stock company ("the railway joint stock company").

3.2 Until the railway joint stock company is established, the provisions of the Law of Georgia "On the Structure and Activities of State Power shall apply; the railway enterprise shall also be managed in accordance with the principles of Article 8.1 of this Law.

3.3 The railway joint stock company shall be established by the Minister for Transport under the Law of Georgia "On Entrepreneurs" at the earliest moment and in any event not later than six months after this Law comes into force.

3.4 The balance sheet of the railway joint stock company shall not include the railway infrastructure, which shall belong to the State in perpetuity.

3.5 The functions described in this law as functions of the Ministry shall not be functions of the railway joint stock company. The Ministry may retain in its own employment such staff of the present railway administration as it needs for the purpose of discharging any of its railway functions.

3.6 The present railway administration under the supervision of the Ministry of Transport shall establish subsidiaries and transfer to these subsidiaries social and non-profit making activities and the staff concerned with these activities.

The balance sheets of these subsidiaries shall include the assets associated with the activities, unless these assets are required for railway operations, in which case monetary compensation representing the value taken by the railway enterprise shall be included in these assets.

These subsidiaries shall then cease to be the responsibility of the railway enterprise, they shall be the responsibility of and belong to the appropriate Ministries, and in the case of doubt as to the Ministry responsible, shall be the responsibility of and belong to the Ministry of Transport until this issue is resolved.

Article 4. Organisation of the railway joint stock company.

4.1 The railway joint stock company shall be formed and shall be regulated under the provisions of the Law "On Entrepreneurs" and shall also observe the requirements of this Law. The charter and regulations of the railway joint stock company shall be determined by the Ministry of Transport and approved in accordance with the relevant procedures.

4.2 The Ministry of Transport shall have the power of management over all of the State owned shares in the railway joint stock company.

4.3 The directors of the railway joint stock company who are concerned with the technical operation of railway transport services or the technical maintenance of railway infrastructure shall possess the relevant qualifications and competence for their areas of activity.

4.4 Activities of the railway joint stock company not concerned with providing railway transport services or managing railway infrastructure shall be re-organised. Separate subsidiary entities, which may be joint stock companies owned by the railway joint stock company, but which must have their own separate balance sheet and accounting, shall be established for these activities by the railway joint stock company. This process must be completed within twelve months from the date of the establishment of the railway joint stock company. These subsidiaries may be privatised.

4.5 The railway joint stock company may also establish subsidiary joint stock companies for specific transport services or for managing railway infrastructure; it may do so either on its own account or in joint venture with private investors. These subsidiaries may be privatised, subject to the approval of the Government of Georgia.

4.6 The railway joint stock company including its subsidiaries shall be managed and shall conduct its business planning in accordance with the principles set out in Article 8 of this Law.

Chapter III

Management of Railways

Article 5. Legislation in the sphere of railway transport.

The legislation in the sphere of railway transport consists of the Constitution of Georgia, contracts and agreements of Georgia in the international sphere, provisions of the Ministry of Transport of Georgia and other normative acts.

Article 6. Property of railway transport.

The railway infrastructure shall always be the property of the State, and shall be managed in accordance with contracts entered into between the Ministry of Transport and railway enterprises.

The equipment associated with the railway infrastructure may not be transferred to other organisations without the consent of the Ministry of Transport.

Where required by the national interest, the Ministry of Transport may make regulations restricting the disposal by State owned railway enterprises of locomotives, rolling stock, equipment for loading and unloading and other essential equipment.

Article 7. Territory of the railway infrastructure, zones for protection and protection of the environment.

In accordance with the legislation of Georgia, the territory of railway infrastructure is the territory in its usage.

The territory of the railway infrastructure is allotted for the rails and stations (including the right of way) as well as for constructions, buildings and other objects which are necessary for the development and exploitation of the railway infrastructure. "Right of way" is territory adjoining the railway, the sizes of which are determined by confirming norms and documentation, but no more than 20 metres on each side of the outlying rail is allowed.

For the provision of normal exploitation of rails, equipment and other objects of the railway infrastructure, located in places of natural calamity, protective zones are regulated.

The rule on the determination of protective zones, their sizes and the regime of using the territory which is allotted for this purpose is determined by the legislation of Georgia.

Railway enterprises are obliged to make provision for the effective use of natural resources and to safeguard the environment from contamination. Railway enterprises

are obliged to make reconstructions and make compensation for damage of an ecological character in order to eliminate the results of accidents, collisions and other cases, caused by them. The legislation of Georgia concerning the protection of the environment shall apply to all railway enterprises.

Article 8. Railway Management.

8.1 Railway enterprises must be independent in direction, management and administration as well as from the administrative and economic control and internal accounting of the State. Their assets, budget and accounting shall be separated from those of the State.

They shall be managed according to the principles which apply to commercial companies; this shall also apply to their public service obligations and to contracts concluded in respect of these obligations.

Railway enterprises which provide railway transport services as well as managing a railway infrastructure must separate these areas in their management and accounting procedures.

Separate cost and revenue accounts must be kept for freight, passenger and infrastructure activities. Where public service obligations are undertaken, the operating accounts shall be separate. The transfer of subventions from one area to another is not permitted.

The compliance with these legal requirements must be shown in the accounting of these areas. This obligation shall apply to all State owned railway enterprises as well as to privately owned railway enterprises.

8.2 The Ministry of Transport acting on behalf of the State shall enter into a contract for a period of five years with the railway joint stock company.

The contract shall specify the activities (including the investment and financing program) to be undertaken by the railway joint stock company and the funds to be provided by the State as subvention, as payment in respect of public service obligations and as investment.

The railway joint stock company shall be required under the contract to produce to the Ministry for Transport a five year business plan setting out its strategy and development programme and corresponding operational and financial targets, projected over a five year period, and encompassing the infrastructure management, freight business, passenger business, the financial payments sought from the Government budget for public service obligations, corporate functions and ancillary activities and business plans.

At the end of the first year, the railway joint stock company shall be required to report on the details of the extent of achievement measured against these

targets. The contract shall then be revised having regard to this, and extended for a further year, with the requirement that the business plan also be extended for a further year.

This process shall be repeated on an annual basis, with the intention also that the business plan shall always be projected five years forward and shall continue without limitation for so long as the railway joint stock company remains in the majority ownership of the State.

The terms of the contract shall at all times follow good commercial practice.

Article 9. Public Service Obligations and non-commercial services

9.1 The Ministry of Transport may require railway enterprises to undertake public service obligations.

9.2 Such public service obligations may be included in contracts entered into between the Ministry of Transport and railway enterprises or may be specified by order. Orders or contracts shall specify the level of services which are to be operated, the level of passenger fares and the extent of concessionary fares given to particular passenger classes.

9.3 Compensation for public service obligations, social, military transit and any other non-commercial services required by the Government shall be paid to railway enterprises out of the annual State budget.

9.4 The amount of the compensation shall be not less than the cost saving which would be possible if the non-commercial services were terminated, taking into account all relevant matters.

9.5 Under no circumstances shall cross-subsidisation of loss-making passenger services from freight services be permitted.

9.6 Where there is doubt as to which Ministry or Government agency is liable to pay compensation under this Article, it shall be paid to the railway enterprise by the Ministry of Transport, which shall in turn be entitled to be re-imbursed by the party that is liable.

Article 10. Tariffs

10.1 Tariffs for international transit including the countries of the former Soviet Union are determined on the basis of international contracts and agreements.

10.2 All railway enterprises, both privately and State owned (including the present railway administration and the railway joint stock company) shall be free to set their own tariffs for freight, which shall be published by these enterprises,

except where control is necessary for traffic where railway transport has a natural monopoly.

10.3 Where tariffs are controlled in a monopoly situation, the tariffs are determined by the Ministry of Transport with the agreement of the Ministry of Finance and subject to the approval of Parliament. These tariffs must respect the commercial principles under which railway enterprises operate.

10.4 In all situations, it shall be permissible for the contract with the customer to provide for additional payment for work and services not envisaged in the tariff.

Article 11. Management and operation of the Railway Infrastructure.

11.1 The Ministry for Transport has responsibility for the management and operation of the railway infrastructure. This responsibility shall be discharged on the basis of contracts entered into between the Ministry of Transport and railway enterprises. One or more contracts may be entered into, and they may be with the railway joint stock company and with other railway enterprises.

The contracts shall require that such railway enterprises shall plan operations so as to maximise the amount of traffic which may be carried on the railway infrastructure and in such a way that shall best facilitate the plans and requirements of all railway enterprises intending to use it.

11.2. The Ministry for Transport shall establish a charge for the use of the railway infrastructure to railway enterprises that provide transport services. The charges shall be collected by the railway enterprise managing the railway infrastructure and shall be used to meet the operating costs and investment costs as agreed with the Ministry in the management contract. Any surplus shall be retained in a fund for re-investment in the railway infrastructure. The charges shall be calculated by the railway enterprise managing the infrastructure, with the approval of the Ministry of Transport and Ministry of Finance and shall be reviewed when circumstances change. The charges shall not discriminate between different railway enterprises and shall also be paid by the railway enterprise managing the railway infrastructure if that railway enterprise also provides transport services.

11.3 No railway enterprise shall be permitted to use the railway infrastructure unless it has been granted a licence for this purpose, except where the provisions of international agreements permit such use.

11.4 Licences to use the railway infrastructure shall be issued in accordance with the law and the Ministry of Transport shall make and publish regulations on standards concerning these licences. In all cases the applicant railway enterprise must be able to meet standards relating to good repute, financial fitness, professional competence and cover for civil liability.

11.5 The Ministry of Transport may, by order, require the railway joint stock company to provide traction to other railway enterprises that intend to use the railway infrastructure, on commercial terms.

11.6 Owners and users of private sidings shall comply with the rules of the railway enterprise managing the railway infrastructure and of the Ministry of Transport concerning the movement of their own rolling stock on the railway infrastructure. They are responsible for the safe movement of the rolling stock on the private sidings, and shall maintain the technical equipment and the rolling stock to the appropriate standard.

Chapter IV

Safety and Security

12. Safety of Railway enterprises and Railway Infrastructure

12.1 The Ministry of Transport shall exercise State control over railway transport. It shall appoint inspectors, who shall be entitled to enter upon the railway infrastructure and upon the property of railway enterprises for the purpose of supervising and checking the same and reporting their findings to the Ministry of Transport.

12.2 Regulations on the technical exploitation of railway infrastructure and railway transport services are the responsibility of the Ministry of Transport

12.3 Railway enterprises managing the railway infrastructure are obliged to make safe provision for the safe movement of trains.

Locomotives, rolling stock, equipment and other technical means must correspond to the rules of railway exploitation, and requirements regulated by security, labour protection, ecological and State standards.

Railway stations and other locations where intensive movement of trains takes place and where shunting movements are carried out are zones of extended danger. Rules concerned with railway working, movements and crossing the rails are prepared by the railway enterprise managing the railway infrastructure and confirmed by the Ministry of Transport.

Placing objects which are radioactive, explosive, poisonous or toxic near buildings or rails of general use is prohibited. Such objects may not be transported to such locations or stored, loaded or unloaded there.

The minimum distance of separation from the rails as well as the points of intersection by pipes, communication and electronic lines is determined by appropriate constructive norms and rules prepared by the railway enterprise

managing the railway infrastructure and approved by the Ministry of Transport.

All persons, organisations and enterprises that send and receive explosive, poisonous, radioactive and other kinds of dangerous freight and goods are obliged to make provision for their safe transportation based on the rules approved by the Ministry of Transport.

During the transportation process, protection of dangerous freight and goods is provided by the transport police.

Article 13. Protection of freight and other objects transported by rail.

During transportation, the protection of freight, luggage and mail is provided by the railway enterprise.

The most important objects and special freight transported by railway while in the railway stations and during the transportation are protected by transport police. The list of such objects and freight is confirmed by the Ministry of Transport, after consultation with railway enterprises.

The railway enterprise is materially responsible for its consignees and consignors.

The sale of freight and goods which lacks the appropriate documentation and cases of unprotected transportation are dealt with in the railway enterprises terms of contract.

Safeguard of public order, the struggle against criminality and fire control shall be provided by the transport police and its territorial subdivisions together with the railway enterprises.

Fire prevention prophylactic operations are implemented and fires are extinguished by a special division of the railway enterprise managing the railway infrastructure. In the case of emergency, this is done with the fire brigades of the Ministry of Internal Affairs.

Article 14 Organisation of Railway Transport operations in cases of emergency.

Railway enterprises shall take measures to eliminate the causes of all kinds of collisions, accidents and events of natural calamity that may be prevented in the future development of railway transport.

The transport police, territorial subdivisions of the police, troops and subdivisions of the Ministry of Defence shall assist in eliminating the results of collisions, accidents and events of natural calamity that pay be hazardous to health, train movements or endanger freight and goods or its storage.

Local authorities shall, during natural calamity, carry out works required by the railway enterprise managing the railway infrastructure.

Chapter V

General

Article 15. Responsibility for damage to railways.

Responsibility of a person for damaging the technical means, prevention and obstruction of railway works is determined by the legislation of Georgia.

Article 16. Terms of employment of staff of railway enterprises.

16.1 The terms of employment of the staff of railway enterprises are regulated by the legislation of Georgia.

16.2 The Ministry of Transport may make regulations specifying categories of employees who are required to undergo specific training. These regulations may require that certificates of competence are required to be held by specific categories of employees, to be issued in accordance with the regulations.

16.3 The Ministry of Transport may make regulations requiring specific categories of Employees to comply with medical standards. The regulations shall specify the required medical standards.

Article 17. Language of Communication in Railway Transport.

All kinds of accounting, balance sheets, commercial, technical documentation, telecommunications, legal and technical information as well as internal staff communications in railway enterprises and organisations which are connected with train services, passenger transportation and freight and goods transit are implemented in the Georgian language.

Article 18. Railway time.

In the organisations and enterprises of railway transport, and which take part in traffic, the local time of Tbilisi shall be used, in order to provide central control of the traffic.

Article 19. Responsibility of Railway Enterprises.

Liability of railway enterprises for not meeting the freight delivery date as well as late delivery of freight to the destination and late delivery of passengers to appropriate stations is determined by terms of the contract, and the laws of Georgia.

Article 20. Insurance.

For the social maintenance of passengers and the members of their families, State obligatory insurance in respect of injuries to passengers is required for railway enterprises.

Voluntary insurance of freight and luggage is also possible.

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RESTRUCTURING OF THE GEORGIAN RAILWAYS

MIS PLAN

RESTRUCTURING OF THE GEORGIAN RAILWAYS

MIS PLAN

CONTENTS

1 MANAGEMENT INFORMATION SYSTEM

1.1 Introduction

Georgia is an independent state that was formerly part of the Soviet Union.

The Georgian Railway with its 1569 Km of track, employs 26,480 staff, carries 3.3 million passengers and 4.8. million tonnes of freight each year.

The Management of the railway is being restructured in line with Government policies and the objectives of the Traceca project.

This restructuring, that will reflect an enhanced business focus, will result in a new organisational structure with associated management information needs.

Railways in the Soviet Union were administered as an entity with all significant decisions being made in Moscow with Russian as the "railway" language and all activities being carried out by a universal code of practice.

This uniformity applied to computer systems in the same manner as it applied to railway operations and manifest itself in the form of large computer systems that were operated in a consistent manner throughout the Soviet Union.

1.2 Current Management Information Systems (MIS)

1.2.1 Central Control under Soviet Union

The management information systems, like the railway operations in the Soviet Union were highly integrated and controlled by the Ministry of Railways (MPS) in Moscow.

Included in these arrangements was a Soviet Union wide computer network based on a central computer centre (MCC) in the MPS in Moscow and a large number of regional computer centres (RCC's) strategically located throughout the Soviet Union.

Two major computer applications systems, ASOUP and EXPRESS, were the primary users of this Soviet-wide network. ASOUP is a wagon information system and EXPRESS is a passenger ticketting and revenue accounting system.

Computer systems development began on the Georgian Railways in the 1970's.

Developments were based on railway computer centres, that were equipped with large mainframe computers. Machines such as teletypes and microprocessors were used to input data over telegraph and telephone lines.

These developments reflected the philosophies then obtaining in the Soviet Union.

Systems developed were:
Statistical Accounting for both Freight and to a lesser degree Passenger traffics,
Production of Freight Train and Wagon model,

Reporting on operations during the previous 24 hours.

1.2.2 MIS Developments under the Georgian Railways

The Georgian Railways telecommunications network was undermined by the larceny of copper wire and peripheral equipment during the years 1990 to 1995 resulting in a reduction in the range of data processing systems on the mainframe computers.

Statistical Accounting was the only system to survive that period and it is now being transferred to personal computers in preparation for the imminent abandonment of the 1970's mainframe computers.

The Georgian Railways decided in 1995 that the personal computer represented the way of the future and adopted a computing strategy based on the use of networked personal computers.

This strategy was a reflection of the growing power of personal computers, developments in communications technology and the opportunity for a phased implementation strategy compatible with the financial capacity of the Georgian Railways.

The high level of commercial exchanges between the States that gained independence from the Soviet Union has resulted in a continuance of the integrated working that was a feature of the railways on during the days of the Soviet Union.

The implementation in 1996 by the railway transport council of the former Soviet republics of a system for the mutual settlement of payments for the use of other railways freight wagons necessitated the development of a computer system that monitors wagon movements into and out of Georgia.

The data so collected forms the basis of charges for the use of Georgian wagons by other railways and assists in the verification of charges from other railways for the use of their wagons by the Georgian Railways.

The Georgian Railways is using the data to control the duration of the stay of other railways wagons in Georgia so as to reduce the level of charge from other railways for wagon use.

1.2.3 Projected MIS Developments

The Head of Computing –Calculating summarised the computing tasks for the future as follows:
Automation of technological processes on linear level,
Optimisation of train movement management,
Automation of all kinds of accounting and financial issues,
Support for the economic evaluation of decisions.

1.3 Core Systems

1.3.1 Accounting

While there is a statistical accounting computer system for freight and passenger traffic, accounting in the Georgian Railways continues to be an essentially a manual process.

1.3.1.1 Accounting in Georgia

Accounting in Georgia is done in accordance with Soviet standards. However, discussions on the benefit / feasibility of moving towards international standards are in progress.

The continued dominance of commercial and transport interaction with Russia and the States that gained independence from the former Soviet Union Russia will be a significant factor in determining the pace of evolution from Soviet standards towards international standards.

Steps are in progress to organise the accounting profession on the basis of an independent self-regulating body as is the case in Western countries. It is anticipated that this development will contribute to the modernisation of accounting practice and standards in Georgia.

1.3.1.2 Accounting in Georgian Railways

Accounting in the Georgian Railways continues to be in accordance with the Soviet standards.

The Georgian Railways take the view that whichever accounting standard is approved by the Government will be implemented by the railway. However, there is no timetable for such a decision by the Government.

A parallel hurdle for the implementation of an accounting system in the Georgian Railways is the fact that organisational re-structuring is an intermediate stage. While one segment of the railway continues to be managed on the basis of the system inherited from Soviet times, the other has been converted to a functional organisation with fewer layers of management.

This means that if a computerised accounting system were implemented at this time it would need to have the capacity to service the information requirements of both organisational structures just as if there were two different organisations working side by side.

1.3.1.3 Accounting & Corporate MIS

A corporate management information system needs both physical and financial measures of performance.

For example, there is no value in a production manager increasing the volume of production if what he produces remains unsold in a distribution warehouse or if the increased output has had to be sold at a price that is lower than the cost of production.

This simple example illustrates that a corporate management information system has draw data from all the business processes in the organisation to produce information that shows how the organisation is performing in all its facets.

Issues that could arise in such a scenario would include:
had the market for the production been properly assessed?
was there an increase in competition?
were the production costs competitive?
were the marginal costs greater than projected?
was the pricing policy soundly based?
what action should be taken to redress the situation?

The answers to such questions would be drawn from data generated by a range of systems.

The critical point is to ensure that the data produced by those systems is in synchronisation and soundly based.

For example, production costs that are based on standard costing rates that are not contemporary are worse than useless, such costs are misleading.

Accordingly, it is essential that the systems that compose the corporate management information system are integrated.

Since the accounting systems are at the centre of the management information structure, it is essential that those systems are integrated.

The need for integration increases with the level of diversity in an organisation.

The enterprise concept that is present in the Georgian Railways is evidence of the diversity of the activities in a national railway.

It is as important to know that the costs in an engineering works are under control as it is to know that the transport income projections are being achieved. All these issues are elements of the mosaic that comprises the Georgian Railway. That is why accounting systems in a railway need to be integrated with each other and with the physical measures of performance.

1.3.1.4 Characteristics of an Integrated Accounting System

An integrated accounting system will:
be based on data being entered once,
support integrated financial and management accounting,
support comparisons with budget and a previous year,
support the processing of non-financial data,
support multiple currency accounting,
support multiple users in client / server mode.
have the capacity to receive data electronically from other computer systems,
have the capacity to transmit data electronically to other computer systems,
accept transaction input over a network,
accept journal data by file transfer over a network,
have a user friendly report writer,
support the exchange of data with desktop tools such as spreadsheets and word processors,
include a user access control process based on a hierarchy of needs.

It is expected that an integrated accounting system would, in addition to providing improved management information, yield savings in administrative costs through:

the integration of data entry into the originating workplace,
avoidance of duplication of data entry,
the exchange of data with other systems over the computer network,
abolition of manual analysis of data,
abolition of manual preparation of reports,
improved report production,
improved access to data on file in the database.

1.3.1.5 Custom written Accounting Systems

The Statistical and Accounting Department has advised the Head of Computing and Calculating that there is no accounting software package that is suitable to the accounting needs of the Georgian Railways and has asked that a custom written system be developed in-house to its specification.

It is understood that the scope of the proposed custom written development does not extend to accounting in major railway activities such as engineering workshops and the permanent way function nor to central ledger accounting.

The development of a custom accounting system either by in-house or contract systems and programming personnel would not be in accord with current thinking.

Current thinking is that it is better to acquire a comprehensive parameter driven package system.

The development of custom written computerised accounting systems has a number of inherent hazards including:

lack of computer system specification experience on the part of those preparing the user specification,
limited scope, for example central ledger accounting not integrated with management accounting,
a tendency to replicate historical manual procedures – without recognition of the role of vested experience in ensuring that manual systems work,
an assumption that individual personal experience constitutes the full range of events rather than undertaking a comprehensive analysis of the accounting process,
limiting data validation with the fallacious objective of speedy data-entry,
an expectation that since the system is being custom written there will be an opportunity to modify the specification both during the development period and subsequently with the experience of operation.

While the former assumption leads to a slippage on the delivery schedule for the new system the latter assumption is a recipe for an unstable system with very high on-going support costs.

The adoption of international accounting standards would increase the possibility of identifying a suitable accounting package system.

The current transitional status of accounting standards coupled with the transitional status of the Georgian Railway organisational structure requires that selected computerised accounting system should have the capacity to adapt to the evolving situation with minimum program changes.

The installation of an integrated accounting system will demand that there is a corporate commitment to making the changes in processes and procedures necessary for its successful implementation.

1.3.2 Human Resources

The human resources function in the Georgian Railways is distributed throughout the various constituent departments, functions and locations.

Record keeping in this wide array of human resources offices is based on manually maintained paper records.

The Human Resources Department in Railway Headquarters in Tbilisi has recently taken delivery of three personal computers and a computerised human resources system.

The system is designed to support:
Staff Application Data,
Appointment of staff,
Staff transfers,
Staff vacation arrangements,
Staff rosters,
Staff grading with wages rates,
Staff work history,
Record of referees,
Attestation documentation,
Staff statistics,
Archives,

Vacation diagrams,

Having implemented the system in the Human Resources Department, the Head of the Human Resources plans to extend the use of the system throughout the Departmental apparatus and throughout the various human resources offices in the various functions and enterprises that comprise the Georgian Railways.

The progress on this task will be largely determined by the availability of finance to purchase the necessary computers.

The Head of the Human Resources Department estimated that approximately 150 personal computers would be required.

1.3.3 Materials Management

While the Materials Manager is responsible for all materials procurement, the system permits unit managers to make direct purchases.

It is understood that this option is exercised by most unit managers.

Materials under the direct control of the Materials Manager are held in warehouses in Tbilisi, Shindisi, Khasuri and Samtredia.

While each warehouse has its own manually maintained stock card records accounting is controlled by warehouse accountants in Tbilisi and Samtradia.

The pattern of materials procurement is determined by the availability of cash.

The shortage of cash has resulted in surplus locomotives and wagons being de-constructed so that the components may be used to repair operational stock.

Materials are transferred in bulk to function / enterprise warehouses which are inspected by representatives of the Materials Manager at regular intervals. These inspections are supported by an annual stock-taking which is made in all warehouses on the dame date.

While communication between these warehouses and the Materials Manager's department is based on the FAX, co-ordination of stock levels in various warehouses depends on telephone enquiries.

The materials management philosophy does not include the concept of treating materials stock-holdings as a capital asset with stocks on hands at year-end being shown on the Balance Sheet.

The view is that as there is never enough money for materials procurement the possibility of having materials on hands at year-end does not arise.

However, the Materials Manager does look forward to the computerisation of the control and accounting processes in the warehouses under his direct control.

1.4 Computing Infrastructure

1.4.1 Structure of the Computer Calculating Centre

The Chief of the Computing-Calculating Centre leads a management team of 16 persons.

The work of the centre is distributed over six departments as follows:

System Development with a staff 21 is responsible for:
Development of new computer systems,
testing new computer systems,
personnel training.

Information Area with a staff of 6 is responsible for:
database creation,
supervision of database use,
implementation of standards,
management of technical library.

Computer Network Administration with a staff of 18 is responsible for:
data communications network administration,
systems support to linear subdivisions,
collecting and processing of wagon information,
information analysis,
information distribution.

Statistical Section with a staff of 32 is responsible for:
- the Statistical Accounting for freight and passenger system including;
document coding,
data entry,
data processing.

Technical Provision with a staff of 14 is responsible for:
the running maintenance of all technical equipment including;
computers,
large machines,
energy supply,
air conditioning etc.
Capital repairs are contracted out on a job by job basis.

Building Services with a staff of 9 is responsible for:
the care of the building and its repair.

1.4.2 Computer Hardware

The computer hardware inventory of the Georgian Railways will, with the abandonment of the obsolete 1970's vintage mainframe computers, consist of personal computers (PC's).

The inventory consists of 59 PC's, that are distributed as follows:

Computer-Calculating Centre	36	
Carriage Service		3
Wagon Service	1	
Statistical Accounting	2	
Personnel		3
Consignment Note Processing	4	
Garabani station		1
Sadakhlo station		1
Poti station	1	
Batumi station	1	
Batumi wagon depot	1	
Samtredi wagon depot	1	
Samtredi Territorial department	2	

Khashuri wagon depot	1
Tbilisi marshalling yard	1

All but five of the 59 PC's are linked in a network as either servers or clients.

The five stand alone PC's are employed in the Computer-Calculating Centre for statistical data entry.

1.4.3 Computer Software

Systems developed for use with the DOS computer operating systems were written in FoxPro-2.0 and FoxPro-2.6.

Systems developed for use with Windows were written in FoxPro for Windows-2.6.
Work is in progress on the conversion of these systems to Visual FoxPro-5.0.

The Local Area Network (LAN) is run under Windows NT.

It is planned, subject to the availability of financial resources, to upgrade file management by the implementation of the Oracle Relational Database management system.

1.4.4 Data Communications Network

The Georgian Railways have made significant progress in the development of a data communications network within the limits of existing data communications infrastructure and available finance.

The difficulties under which the Georgian Railways operate are demonstrated by the fact that while the nominal speed of installed modems is in the range 1200 bps to 33600 bps the real transmission speeds being achieved are in the range 200 bps to 9600 bps.

The Georgian Railways have recognised the benefits that accrue from networking personal computers (PC's) resulting in all but five being networked through this combination of local area network in Tbilisi and long distance communications to a number of centres including Moscow.

The binary synchronous links with Moscow and two of the stations are interfaced to the LAN through a combination of two IBM486 PC's and a data concentrator.

The networking of PC's will:
enable the distribution of data collection to the responsible department,
remove the need for duplicate data entry,
reduce the hazard of data-entry errors,
improve data exchange between PC's on the LAN,
reduce the labour content in the data processing activity,
give ready access to the databases on the network,
increase the availability of the PC's for data processing.

The absence of good data communications is seen to be a major obstacle to the introduction of modern management techniques and operational controls.

The proposed TACIS Fibre-Optic cable from the Black Sea to the Caspian is seen to have the potential to make a major contribution to meeting the data communications needs of the Georgian Railways.

However, there is a lack of information on the boundaries of the proposed service particularly on issues such as the number of intermediate interface points and the provision in the planned configuration for data transmission connections.

Recognising the need to improve communications in the near-term, the Georgian Railways have initiated tests in the use of satellite communications as an interim measure and plan to install satellite communications at a number of stations starting in November, 1998.

The Georgian Railways perceive this to be an expensive but necessary strategy.

Satellite equipment at stations served by the TACIS Fibre-Optic cable will be transferred to other locations whenever the cable service becomes available.

The installation at Rustavi was at the planning stage when the above diagram was drawn.

1.5 Computing Techniques

1.5.1 Data Coding

Coding structures are the foundation of computerised systems. This is particularly so when the computerised systems are integrated management information systems.

Integrated computerised systems are achieved through the exchange of data between systems by electronic means without any need for manual intervention.

The successful exchange of data depends on a coherent approach to coding. That is the coding structures which support integration have also got to be integrated.

A coding system must condense information, ensure uniformity of presentation, eliminate ambiguities, and facilitate sorting and filing.

The coding system must enable each item in the list to which it refers to be identified in a single, reliable and easy manner.

The code chosen then makes it possible to achieve the necessary one-to-one relationship between an item and the symbol which represents it. It should also enable items in the list to be described.

A coding structure must therefore essentially meet the following requirements:

Permanence:	the code allocated must remain unchanged for as long as possible,
Simplicity:	the code must take account of the conditions under which it is to be used and the personnel using it,
Accuracy:	there must be no ambiguity in allocating a code to an item or in recognising an item from a code,
Conciseness:	codes should use the minimum number of symbols, taking into account the requirements expressed by the users, and if at all possible have a constant length,
Enhancement:	it must be possible to update the code in the event of the number of items in the list being increased,
Numeric:	so that difficulties associated with the use of different scripts are avoided.

It is important that a coding structure should have sufficient provision for expansion so as to avoid the problems/cost of upgrading computer applications and/or having to undertake tasks such as the re-marking of railway rolling stock.

The efficient operation of a coding structure depends on code allocation being vested in a single authority. Since the ready integration of systems depends on codes having a consistent meaning across an organisation, it is necessary that the development of coding structures should be addressed on an organisation wide basis.

Not alone should a code have a consistent meaning across an organisation but so also should an item have but one code across the organisation.

Where a coding structure is used by two, or more, sections of an organisation there is a need for agreement between the parties as to which should be the code allocation authority or as to whether code allocation should be vested in a committee representative of the participating sections.

1.5.2 Information Quality

The introduction of a new management organisation with a competitive business focus will generate a demand for information to be available as required.

The servicing of this demand will call for the availability of an appropriately organised database with online enquiry tools enabling the end user to access the database and formulate enquiries with a minimum of effort.

It will be essential to ensure that there is consistency in information produced whether in scheduled reports or in response to ad-hoc enquiries.

The foundation of consistent information is good systems design and accurate data.

If invalid data is accepted by a computer system, the information provided by the computer system will also be invalid.

A failure to recognise such inaccuracies can result in disproportionate damage to an organisation because of the impact of decisions based on the erroneous information.

Evidence of such inaccuracies will result in a lack of confidence in information provided by the system. It will lead to the development of manual checking processes with an associated waste of resources.

The wasteful consumption of resources can also arise where data is collected in parallel by two, or more, application systems.

The information produced by such systems will inevitably be cross checked and apparent incompatibilities identified.

While some incompatibilities may be due to valid differences in presentation, others will arise from data-collection errors in one, or more, of the applications system.

Data collection errors, during the document trail from an event to the time and place of data-entry, can arise in a number of ways including:
original data recording errors,
data transcription errors,
data summarisation errors,
data transmission by telephone errors,
data entry errors due to inadequate validation at time of entry.

Having parallel data collection processes increases the opportunities for such errors with the associated implications.

The reduction / avoidance of these situations can best be achieved through:
data being entered once at source, ideally by the person involved in the event,
online data validated at time of entry,
data, once entered, being available to all application systems,
the exchange of processed data between application systems,
the development of a corporate database available to all users / systems in accordance with a formal hierarchy of access needs.

These processes can be facilitated by having personal computers located in the work-place where the person doing the work will have the knowledge to correct errors, identified by the validation process, in real-time.

The arrival of the personal computer with its graphic colour screen has provided the basis for a dramatic change in the data-entry process.

The use of named boxes supported by item description selection from a drop-down menu has reduced the need for the entry of the codes on which computer systems rely so heavily and as a consequence reduce the opportunity for data-entry errors.

Drop down menus can be customised to reflect the frequency with which items in a list occur in a particular location thereby speeding up the item selection process and data-entry generally.

1.5.3 Database

1.5.3.1 Computer Systems Integration

The initial approach to computerisation was to develop systems in isolation.

It was soon realised that there was an opportunity / need to exchange data between systems. The exchange of data between systems brought advantages such as:
the avoidance of duplicate data-entry, which in the early days of punch cards when each item of data had to pass through two keyboard processes of punching and verification prior to being loaded into a computer was very costly,
consistency in the data being used by associated systems,
faster production of reports.

In time it was not unusual for many systems to be linked together in series to produce a final product such as management accounting reports.

The diagram below is a simplified example of the relationship between a payroll, inventory control and job costing systems.

It shows how the validation of the timesheet, job card and materials requisitions were carried out in isolation from each other thereby creating opportunities for incompatibilities as the systems converge to produce the job costs.

Incompatibilities at each point of convergence generate additional human involvement, lengthen the duration of the processing cycle and delay the production of management reports.

The integration of such systems also calls for the synchronisation of the running of the various systems so that files have the appropriate status when used. Synchronisation calls for the intervention of a human scheduler.

As the number of inter system relationships increases, the opportunity for incompatibilities and the complexity of the scheduling task increase exponentially leading to failures and disruption.

1.5.3.2 Database Management

Database management systems were developed in response to a growing demand for the integration of computer systems.

Relational databases such as Oracle have become the accepted database technology.

Relational database design is built around having a series of Tables each dealing with a separate facet of the real world which the database portrays.

Forms, which are associated with Tables as appropriate, are the means through which data is input and processing is initiated.

Data is output from a database by means of Reports and Queries each of which are associated with Tables as appropriate. The Reports facility is employed when producing reports printed on paper in accordance with a schedule. The Query facility is employed to make on-line enquiries where the response may be displayed on a computer screen or printed as appropriate.

The guiding principle in database design is that each item data is held only once and is made available to users in accordance with a defined hierarchy of access rights.

This ensures that data is entered once thereby avoiding the increased exposure to errors in multiple entry scenarios and the associated problems of reconciliation.

A database management system:
controls access to data,
ensures that synchronisation issues do not arise,
provides data recovery procedures in the event of system failure.

1.5.4 Management of MIS Development

There is a need to ensure that investment in MIS supports the new management organisation in the achievement of the business objectives of the Georgian Railways.

The corporate approach to MIS development needs to ensure that:
business focused applications systems which yield improved services to the customers in a cost effective manner are implemented,
the business unit management had a sense of system ownership with an associated sense of responsibility for the successful implementation and operation of new systems,
the development of computerised systems is undertaken in the coherent and complementary manner which is necessary to the achievement of integrated management information systems,
computer related investment decisions are made on the basis of the contribution to the improvement of the overall profitability of the Georgian Railways.

1.6 Recommendations

1.6.1 Accounting

It is recommended that the accounting needs of the restructured Georgian Railways should, if at all possible, be met by the acquisition of an established accounting package.

The selected accounting package should:

- have a proven record of performance,
- be hardware independent,
- have vendor/agent support in Tbilisi,
- support integrated financial and management accounting,
- support multiple currency accounting,
- support the processing of non-financial data,

support multiple users,
have real-time validation of data at point of entry,
provide interfaces for the exchange of data with other computer systems,

- accept transaction input over a network,
- accept journal data by file transfer over a network,
- have a user friendly report writer,
- support data exchange with desktop tools such as spreadsheets and word processors,
- include user access control in accordance with a hierarchy of needs.

The computerised accounting package system most suited to the needs of the Georgian Railways would most probably be parameter driven and accordingly adaptable to the changing world of evolutionary accounting standards and organisational re-structuring.

It is not possible on the basis of available information to make an estimate of the cost of the software required for the implementation of an integrated accounting package system.

It is appropriate that the Georgian Railways should endeavour to ensure that contracts for computer software do not restrict its ability to use the software in any part of the railway or ancillary services.

1.6.2 Human Resources

It is recommended that the installed Human Resources computer system should be extended on a phased basis throughout the railway organisation.

An estimated requirement of 150 PC's for this function made by the Head of Human Resources represents a major investment for a single application.

It is recommended that the estimate should be reviewed under a number of headings including:
the distribution of the human resources function in the reorganised management structure,
the opportunity for sharing of PC's between Human Resources and other functions such as payroll in smaller locations.

The effective use of the Human Resources computer system depends on its integration with the payroll function. Similarly, the introduction of integrated accounting calls for the automation of the payroll function.

It is recommended that the Georgian Railways should computerise its payroll function on the basis of a package software system which would be standard throughout the railway.

The selected system should:
operate in client / server mode,
be computer vendor independent,
produce the standard payroll documentation,
be compatible with the Human Resources computer system,
be compatible with the integrated accounting system,
support online enquiry facilities,
include an access control system based on a hierarchy of need.

1.6.3 Freight Management Systems

The inventory of freight related systems should be reviewed with the objective of developing an integrated approach to the collection and storage of data relating to all aspects of freight operations.

This investment in the freight management systems should also include commercial functions such as:
customer files,
information to clients,
real time computation of costs,
pricing and invoicing,
income statistics by source.

The system would also collect data on train movement in support of the train despatch function and as a basis of information for both management and customers.

Since freight and passenger trains share resources such as operating paths, the train despatching data should not be limited to freight operations.

The train despatching sub-system should provide information covering:
circulation requirements,
circulation timetables
planning,
circulation statistics,
analysis and forecasts.

This type of integrated development is most readily achieved in the context of a database management system such as Oracle.

The adoption of database techniques would:
reduce the volume of data-entry,
avoid the need for cross-checking inherent in situations where the same or similar data is collected through many systems in parallel,
improve the quality of data held on file,
increase the usability of the data,
increase the consistency of the data on which operational and management decisions are based,
lead to better management information.

It is recommended that a "pilot" commercial "information centre" should be established in Tbilisi to assess the benefits and refine the operation of the service to the Georgian Railways customers.

1.6.4 Passenger Reservations and Ticketing

The passenger ticket and reservations activity is manual.

The limited contribution of passenger services to the income of the Georgian Railways does not constitute a basis for an investment in the general computerisation of the reservations and ticketing activity.

However, the computerisation of reservations and ticketing by Azerbaijan Railways may necessitate the introduction of that system into Tbilisi passenger station for international trains to and from Baku.

Accounting details of ticket sales etc., should be submitted through computers installed for train despatch purposes.

1.6.5 Materials Management

The scale of the investment in materials stock holdings is a critical item in the financial viability of an organisation.

Good financial management requires that stock holdings are kept to a minimum through the integration of the records of all warehouses and the adoption of "just in time" (JIT) techniques.

It is recommended that:
the materials control function should be computerised by the installation of computing facilities in all locations where there are significant stock-holdings,
the computers in the various warehouses should be linked to the Materials Manager's department,
the Georgian Railways should seek to obtain a software package for the materials management function,
the selected package should:
work in client / server mode on a Windows computer platform,
fulfil all the materials management tasks such as order, receipt, issue and inter-store transfers,
accept both volume and value data for these transactions,
maintain records of both the volume and value of stock holdings per material item,
have the capacity to calculate issue price per item on the basis of the amount of the suppliers invoice details,
generate journal entries for transfer electronically to accounting and costing systems,
include access control in accordance with a hierarchy of need.

The focus of the new management structure will, among other items, be on the optimum use of available cash resources.

The optimisation of the level of cash tied up in stock-holdings requires that the activities of all stock warehouses are co-ordinated so as to ensure that materials in surplus in one warehouse are not being ordered for another.

This objective is best achieved through the development of an integrated stock control system for those warehouses.

The warehouse computers would be linked by communications to achieve the level of integration necessary to achieve the desired integration.

The implementation of this project would require that a catalogue of material codes be developed for all materials held in all ADDY materials warehouses. It would be essential the each stock item had the same material code in all materials warehouses.

Having consistent materials codes across all materials warehouse computer systems would support the cross checking necessary to ensure avoidance of the ordering of unnecessary materials.

Consistent materials codes across all warehouses would facilitate the extraction of data on the various aspects of the materials management function such as:
annual expenditure on particular materials,
stock-holdings of particular materials,
incidence of slow moving materials,
incidence of non-moving materials,
consumption of materials in a given location compared with some measure of activity in that location.

1.6.6 Accounting in Enterprises

The manual accounting systems which are present in all enterprises should be replaced by the computerised accounting system adopted as standard for the Georgian Railways.

The implementation of an accounting system in an enterprise such as an engineering workshop should be based on the client / server model with a number of PC's linked to a server and printers on a LAN.

These LAN's would be linked to the Computing-Calculating Centre in Tbilisi as data communications became available.

1.6.7 Computer Calculating Centre

The reorganisation of the management structure of the Georgian Railways should be accompanied by a parallel review of the role of the Computer-Calculating Centre.

Activity in the centre should be analysed and associated with the new functional structure.

The process of transferring data collection out to personal computers in the originating functions / enterprise / locations should be accelerated.

There should be a parallel transfer of local data processing out to those personal computers.

Functional management should be given control over and responsibility for the running of their local computing facilities - including cost control.

These activities should, in the first instance, be distributed to the head offices of the "enterprises" and the functions. The dispersal of the activities down to the "ground level" where the events take place would depend on the availability of communications facilities and finances.

The dispersal of responsibility for the day to day operation of data collection and entry into computer systems would:
place the responsibility for data collection on the enterprise / functional management,
give enterprise / functional management authority over the consumption of resources in data collection,
give enterprise / functional management an incentive to ensure that data collection was done in the most efficient and cost effective way,
result in the personnel establishment of the Computer-Calculating Centre consisting almost entirely of specialist technical and professional personnel,
enable the Computer-Calculating Centre management to concentrate on its primary role of system delivery and support.

The Statistical Section which is dedicated to the collection, coding and data entry of statistical data represents an obvious opportunity for the Computer-Calculating Centre to divest itself of activity which would be more appropriately located in the Statistics and Economic Analysis Department.

The work currently undertaken by the Technical Provision Department of 18 persons is normally contracted out to specialist providers of these services. It is recommended that the Computer Calculating Centre should follow this widespread practice.

If the Computer-Calculating Centre is to fulfil its role and make a necessary contribution to the modernisation of the Georgian Railways management information systems, it will have to undertake a number of tasks most notably:
build on its current technical skills base,

establish a supplier / customer relationship with the managers of functional units / enterprises, maintain an inventory of computing resources, both hardware and software, throughout the Georgian Railways – this inventory should be synchronised with asset management in finance and accounting.

The staff profile of the Computer-Calculating centre should be reviewed to ensure that it includes personnel with extensive skills and experience in the following:
computer hardware selection,
computer software selection,
telecommunications equipment selection,
computer systems design,
telecommunications network design,
telecommunications network management,
database design,
software package procurement,
software programming,
system acceptance testing,
system specification development in close co-operation with the end-user,
contract specifications,
tender evaluation criteria,
contract negotiations,
development of standards for:
system operating instructions,
data security,
site security,
failure recovery,
third party software,
computer hardware,
data communications hardware.

The achievement of this level of expertise will involve a combination of recruitment of specialists and a formal programme of personnel development.

The personnel development programme should be based on attendance at a combination of internal and external courses.

The personnel development programme for the Computer-Calculating Centre should an integral part of an overall management development plan within the context of the introduction of the new organisation structure and management methods.

The Computer-Calculating centre of the future should regard itself as a service enterprise with customers.

A service enterprise that, while setting standards and ensuring that those standards are observed, recognises that its purpose is to respond, in accordance with best information technology practice, to the identified needs of the customers in the pursuit of their business objectives.

The relationship between the Computer-Calculating centre and its customers will be best advanced within a formal context combining opportunities with responsibilities.

1.6.8 Coding Structures

It is recommended that the establishment of a Coding Structure Project Team be given top priority.

This project team would consist of a nucleus of foreign experts supported by Georgian Railways personnel representative of the various enterprises and disciplines in the Georgian Railways.

The development of a coding structure is a prerequisite to the development of integrated management information systems for the Georgian Railways.

While the adoption of data collection techniques based on the power of the PC will no doubt reduce the user exposure to coding structures, system designers will still have a need to use such codes within their systems.

The coding structure design will have to encompass all activities in the Georgian Railways so that coding conflicts may be avoided as computer applications developed individually are integrated in the future.

The Project Team will have to undertake an in-depth examination of all activities in each enterprise.

The scale of this task is demonstrated by:
the variety of activity in the Georgian Railways,
the range of enterprises that comprise the Georgian Railways,
the need to undertake an in-depth examination of a number of locations in each enterprise / function / department.

The final product of the Coding Structure Project will be a series of Coding Manuals for the Georgian Railways which list Cost-Centre and Nominal Account codes in:

numerical order with short and expanded narrative descriptions,
short description alphabetical order with numerical code and expanded narrative description.

The use of these Coding Manuals in the development of computer systems would ensure that systems developed individually were compatible and available for integration as management information systems developed.

While the duration of this task would be dependent on the scale of the resources employed and the co-operation of the various functions / enterprises, it is anticipated that it would be prudent to plan on an at least two calendar year programme.

1.6.9 Information Quality

It is recommended that:
the Georgian Railways MIS development plan should include provision for the progressive distribution of the data collection function to PC's sited in the locations where the events occur,
data collection programs should be developed around the facilities of the personal computer's graphic user interface using form filling techniques supported by drop down menu options to reduce the need for code selection and entry.
prime data should, as far as is feasible, be entered by the person undertaking the activity to which the data refers,
the objective should be to have data-entry always done at the location where the activity occurs,
data should be entered once,
data should be subjected to on-line validation at time of entry,
data should be stored in corporate databases,
data should be available to systems and users in accordance with a hierarchy of access needs,

1.6.10 Database

It is recommended that, if at all possible, a database management system such as Oracle should be adopted as the Georgian Railways file management standard.

System design personnel should be trained in relational database design concepts so that they may be equipped to ensure that systems design, prior to the acquisition of a database management system, reflects relational database principles.

1.6.11 Management of MIS Development

It is recommended that an MIS Steering Committee be established to:
- determine MIS policy,
- assess proposals,
- set implementation priorities,
- control MIS costs.

This group, which would be led by the Chairman of the Georgian Railways, or a Deputy nominated by him, would be guided by its assessment of how proposed projects would contribute to the achievement Georgian Railways business objectives in a competitive environment.

Project proposals would:
- originate in the business units / functions / enterprises,
- be assessed for technical feasibility by the Computer-Calculating Centre, and
- be priced in conjunction with an accounting nominee of the Deputy for Economics.

Project proposals would be presented to the MIS Steering Committee by the proposing Deputy supported by the Head of Computing.

Approved projects would be passed to a business unit Working Party that would be responsible for the development and implementation of the project:
- to specification,
- as scheduled, and
- within the approved cost budget.

Business unit Working Parties would consist of representatives of the business unit and the Computer-Calculating Centre. These Working Parties would be led by a nominee of the proposing Deputy.

The Computer-Calculating Centre, or an external contractor, would undertake work on a sub-project basis for the Business Unit Working Party.

The leader of each Working Party together with the lead Computer-Calculating representative on the Working Party would report to the MIS Steering Committee on progress against specification, cost and schedule at pre-determined intervals such as once every four weeks.

It would be the responsibility of the MIS Steering Committee to initiate project performance audits following a period of live running.

The adoption of this approach to MIS development should ensure that:
business focused applications systems which yield improved services to the Georgian Railways customers in a cost effective manner are implemented,
the business unit management had a sense of system ownership with an associated sense of responsibility for the successful implementation and operation of new systems,

the development of computerised systems is undertaken in the coherent and complementary manner which is necessary to the achievement of integrated management information systems.

1.6.12 Data Communications

It is recommended that:
- a multi-disciplinary Working Party be established to:
clarify the scope and boundaries of the proposed TACIS Fibre-optic cable,
develop a comprehensive communications strategy covering voice, data, video and signalling,
the computer development strategy should be based on the implementation of local area networks (LAN's) linked by wide area network (WAN) bridges as improved long-distance communications become available.

1.6.13 Training

It is recommended that the design and objectives of the planned management information systems should be an integral part of training programmes developed to introduce middle and lower management to the detailed implications of the new organisational structure.

Management and personnel should be educated in the operation and use of the planned MIS systems as these are being developed and implemented.

Technical personnel should be trained in the skills required to design, develop and install these new systems, both computer and communications.

Business unit personnel will have to be given training in specification of needs, the testing of systems, the installation of systems and the ongoing management of systems.

User personnel will have to be trained in the tasks involved in the daily running of the systems.

These proposals should be incorporated into an overall training programme in support of the introduction and operation of the new business focused management structure.

1.7 Near-term Strategy

The complexity of the Georgian Railways structure, the scale of the education task, the scale of the training task, the evidently large scale of the investment involved all point to a need for a phased implementation of management information systems in the Georgian Railways.

In addition, it is inevitable that there will be a waiting period prior to the availability long-distance data communications based on the TACIS Fibre-Optic Cable.

The duration of this period will consist of components such as:
project approval and funding,
project design,
request for tenders,
review of tenders and supplier selection,
lead time for delivery and installation of equipment,
system testing and acceptance,
service connection, for example time taken to interface LAN's to the TACIS Fibre-Optic Cable between Black Sea and the Caspian.

The development of a coding structure reflecting the newly reorganised management structure and activities in the Georgian Railways should be addressed as a matter of priority in anticipation of the availability of resources both computer and communications.

The completion of the coding structure would provide the basis for the development of an overview of the Georgian Railways management information system identifying the various component modules and defining the data to be exchanged between those modules.

The management information systems overview should be driven by the information needs of the new management structure and style reflecting the manner in which the Georgian Railway plans on adapting to the emerging business environment within which it will have to develop.

The modular composition of the Management Information Systems design would be both functional and geographic giving an opportunity for the adoption of a strategy adapted to the availability of data communications facilities.

One possible strategy would be to first implement the new management information systems in the top layers of the new management structure and to extend the system down through the organisation progressively.

This strategy would have the twin benefits of:
affording top management an opportunity to adapt to and adopt the new processes before embarking on "selling" new approaches to middle and lower management,
allowing the selection of geographical modules on the basis of benefit to the Georgian Railways and the availability of data communications facilities.

The project selection process should take into account factors such as the:
benefit accruing to the Georgian Railways from a possible development,
availability of computers for the project,
possibility of installing LAN's where appropriate,
availability of trunk data communications,
acceptability of establishing inter-LAN communications over the INTERNET,
acceptability of data transfers by diskette during the waiting period.

The satellite communications strategy adopted by the Georgian Railways pending the arrival of the TACIS Fibre-Optic Cable is representative of the type of initiative which is appropriate in the near-term.

The management of the Computer-Calculating Centre should take the opportunity afforded by this "waiting period" to convert itself to the model for the future by divesting itself of "user tasks".

The systems implementation process should be based on a combination of package software for generic situations and custom written software for railway specific needs.

The custom written software should be developed using a combination of in-house expertise and software contractors. The employment of contractors would have a number of benefits including:
a faster development programme,
avoidance of the hazard of having too many personnel when the initial peak development demand had passed.

It is important to be conscious of the load that computer systems implementation places on the business user within an organisation.
business users need to be educated in the opportunities and requirements of computerisation so that they may be equipped to specify their needs and business processes to computer specialists,
key user personnel have to be trained so that they test and accept new systems,

user personnel have also to be trained in the operation of computer systems.

The scale of this work-load means that there is a limit to the volume of computerisation which can be absorbed by a business unit either operational or administrative.

Accordingly, computerisation development programmes depend not alone on the availability of resources such as finance and data communications infrastructure but also on the capacity of an organisation to service such developments while continuing to perform its day to day tasks.

1.8 Acknowledgement

The observations made in this report reflect the data made available during the study period and experience gained elsewhere.

Restructuring of Georgian Railways

Volume I
Environmental Management Plan

Restructuring of Georgian Railways

Volume I
Environmental Management Plan

CONTENTS

EXECUTIVE SUMMARY

This report constitutes Volume I of a two-volume report on the environmental management of Georgian Railways. Its sets out a proposed Environmental Management Plan for the railway. Volume II provides a more detailed account of the current environmental legislation in Georgia relevant to the railway.

The European Bank for Reconstruction and Development (EBRD) is giving consideration to providing a loan of US$20 million to Georgian Railways (Sakartvelos Rkinigza - SR). The project is designed to enhance the physical and economic viability of the strategically important trans-Caucasian transport corridor which links the central Asian republics of the former Soviet Union with the Black Sea ports and western Europe.

The loan to be provided to SR provides for a capital investment programme in track renewal, track maintenance, replacement of bridge sleepers, reinstatement of signalling equipment and the installation of new fibre optic communication systems. The EU Tacis TRACECA Programme (Transport Corridor Europe Caucasus Asia) is working closely with the EBRD and providing US$6 million for the fibre optic communications and US$1.2 million in technical co-operation. The technical co-operation programme includes the preparation of a 5-year business plan, restructuring proposals for the railway and an Environmental Management Plan.

This report sets out the current environmental status of the railway and identifies several priorities that will need to be addressed these include:

- major oil spills resulting from damaged track or poor rolling stock.
- pollution along the track at train stopping points and river crossings;
- widespread pollution and contamination issues at loading and unloading terminals; and
- waste management.

The proposed investment programme will largely generate environmental benefits but by far the largest environmental challenges that will face the railway will arise through the restructuring of SR and its proposed division into separate business and service units. The railway is faced with an enormous stockpile of redundant equipment, wagons and locomotives, and by huge problems of land contamination and emissions, non-compliant with current legislation and best practice.

This report sets out a framework EMP for the railway and proposes:

- the creation of the post of Corporate Environmental and Health and Safety Manager reporting directly to the Director General of the railway;
- the creation of the post of an Assistant Corporate Environmental and Health and Safety Manager for each of the proposed operating units of the restructured SR;
- the establishment of a corporate environmental policy;
- a complete and thorough due-diligence audit of all SR facilities and operations;
- a legislative review and the establishment of a register or database of environmental legislation;
- the establishment of a priority action list for those areas where SR is non-compliant with current legislation;
- separate EMP's for specific facilities;
- the preparation of corporate directives on *inter alia* waste management, emergency oil spill plans, materials storage, energy efficiency and recycling; and
- an early an on-going training and 'train-the-trainers' programme for SR.

1 MISSION AND OBJECTIVES

1.1 Introduction

The European Bank for Reconstruction and Development (EBRD) is giving consideration to providing a loan of US$20 million to Georgian Railways (Sakartvelos Rkinigza - SR). The project is designed to enhance the physical and economic viability of the strategically important trans-Caucasian transport corridor which links the central Asian republics of the former Soviet Union with the Black Sea ports and western Europe.

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This report constitutes the Environmental Management Plan for the restructured railway.

The EBRD is directed by its founding agreement to 'promote in the full range of its activities environmentally sound and sustainable development'. In order to implement this directive the Bank ensures that all of its investment and technical co-operation activities undergo environmental appraisal as part of the overall financial, economic, legal and technical due diligence process.

The Bank categorise projects in three ways:

1. **A Level** projects are 'greenfield' or major extension projects. Projects listed in this category will normally require a full Environmental Impact Analysis (EIA) as part of the loan procedure.

2. **B Level** projects are those greenfield or major extension projects not included in the EBRD listing for category A. By virtue of their size and nature they will have a lesser impact on the environment and will require an Environmental Analysis (EA). The EA is similar in scope, but more limited than, a full EIA.

3. **C Level** projects are those considered not to have any potential impact on the environment and do not require either an EIA or EA.

Regardless of the above categorisation if, in the opinion of the Bank, a project requires an environmental audit it is screened in category 1. If no audit is required, it is screened in category 0.

This project has been screened as Category B/0 and the Bank requires the preparation of an Environmental Management Plan.

1.2 Environmental Management Planning

1.2.1 Environmental Management and Monitoring Plans

The integration of environmental issues with all aspects of a business operation has become an nl accepted component of modern commercial good practice. Companies in all sectors now recognise that both for public relations risk management and financial prudence it makes sense to ensure that environment is a core business function.

Corporate Environmental Managers often form part of the senior management team of a business. They may well have overall responsibilities that extend through issues such as stack emissions, effluent discharge and waste management all the way to procurement and recycling in the office environment and the training of staff. In larger, more complex operations their functions will be delegated through the management structure to individual plant managers and administrators depending on the nature of the business. Very often, operational health and safety will be integrated into the environmental management function.

A key tool in the environmental management system of a business will be an Environmental Management Plan (EMP). The EMP will set out the environmental position of the business, review this against relevant national and international standards and practices, and examine those issues necessary to either achieve compliance and/or meet future expected regulatory requirements. In addition the EMP may address housekeeping issues which will impact on the overall profitability of the business such as waste management, recycling and procurement.

It is extremely important that the EMP is seen as working document and which provides the basis for operating an environmental management system (EMS) on a day to day basis: one that regularly sets targets, monitors progress and re-evaluates performance. The EMP should be integrated as part of the overall planning strategy of an operation and should track the development of the corporate business plan.

1.2.2 Environmental Management Plan for SR

An EMP plan for SR will not only be a requirement of the EBRD loan but will make good business sense for the restructured railway and form part of the 5-year business plan.

Current responsibility for environmental matters within SR rests with the Head of Scientific Technical and Information Services within the Chief Engineer's Directorate. Although SR recognise the need for environmentally sustainable procedures and operations no environmental policy or EMP for the railway has been prepared.

The objective of this report has been to prepare a draft EMP plan for SR which will provide a framework for the environmental management of the railway and a priority action plan.

The report will:

- set out the current environmental problems on the railway which are based on a series of interviews with key staff, site visits and background information;
- review the present environmental standards and guidance in Georgia which SR will need to meet;
- describe the likely impacts of both the capital investment programme to be funded by EBRD and the restructuring proposals for the railway;
- propose an Environmental Management Plan for SR together with priority actions; and
- set out roles and responsibilities and training needs within a new SR structure.

2 PROJECT DESCRIPTION

2.1 Current Operations

2.1.1 Operations, Infrastructure, Rolling Stock, Traffic

The Georgian Railway system is a link of key strategic importance in the Caucasus. It connects the central Asian republics of Turkmenistan, Uzbekistan, Tadjikistan, Kyrghyzstan and Kazakhstan via the Caspian Sea and Baku in Azerbaijan to the Black Sea ports and western Europe. The trans-Caucasian section of the rail link consists of 924km of electrified double track connecting Baku to the Georgian ports of Poti and Batumi.

Georgian Railways has a route length of 1569km of which approximately 270km is double tracked. The main section consists of the trans-Caucasian link to Baku but there are also important connections to Armenia and Moscow (although the Moscow link is closed at the time of writing due to the conflict in Abkhazia.

The railway is laid to Russian standard gauge with a mix of concrete and wooden sleepers which support 65kg heavy section flat bottomed rail suitable for a maximum loading of 25 tonnes. The main lines are electrified at 3.3kv. The line and related structures are in very poor condition in many parts, forcing speed restrictions on several sections.

Rolling stock consists of 1176 passenger vehicles of which 534 are operational and 20,000 freight vehicles of which 5000 are in service. The locomotive fleet is 300 of which 59 units are operational.

Traffic on the railway collapsed with the break-up of the Soviet Union. Freight traffic was 36 million tonnes in 1988 and declined to 4 million tonnes in 1995, similarly passenger traffic fell from 17 million to 3 million over the same period. Since 1995 freight traffic has begun to recover based primarily on oil from Kazakhstan via the Caspian Sea.

Freight is the dominant source of traffic for SR accounting for greater than half of the total tonnage carried. Of the total freight traffic of 7.2 million tonnes in 1997 over half was oil in transit, the main growth coming from the Tengiz crude oil field operated by Chevron in Kazakhstan. Other oil products come from SOCAR (the State Oil Company of Azerbaijan) and from Turkmenistan. Most oil traffic is westward through Georgia and, although a number of pipelines are currently being planned, oil traffic will dominate the freight rail market for the foreseeable future with substantial reserves in Azerbaijan, Kazakhstan and Turkmenistan yet to be developed.

Freight traffic eastbound from the Black Sea is the second most important source of traffic for SR (1.23 million tonnes in 1997). The traffic consists of grain, flour, sugar, foodstuffs and consumer durables.

2.1.2 Organisational Structure

Responsibility for environmental issues in SR currently rests with Mr Tornike Kupatadze, Head of the Scientific and Technical Progress and Information Division. He has two further specialists working for him the principal one of whom is Prof. Marat Tsitskishivili the founder and first vice-president of the Georgian Academy of Sciences who is employed on a part-time basis.

The Scientific and Technical Progress and Information Division reports to the Chief Engineer who is a First Deputy of SR. The Chief Engineer in turn reports directly to the Head of the Railway Department.

There is no Environmental Management Plan in place for the railway and the work of the Division is principally to:

- receive, co-ordinate and act upon all environmental data related to railway operations that is issued by the Georgian Ministry of Environment;
- approve and issue a railway 'ecological passport' for all railway facilities. A site audit is carried out by the Division as part of the process and a comparison made with national regulatory standards. A facility may either be stopped from operating if it is non-compliant or asked to prepare an Environmental Action Plan. Fines may be applied in appropriate circumstances.

An 'ecological passport' for a facility should be renewed every five years. In practice, however, the railway authority have neither the money nor the resources to carry out this work and no railway facilities have valid ecological passports.

The Division have no dedicated laboratories or mobile laboratories and there is no emergency response team to deal with major environmental incidents.

2.2 Investment Components

The investment financed by the EBRD and the EU-Tacis programme can be broadly grouped into two elements:

- capital investment programme;
- technical assistance and restructuring.

The programmes are described in more detail below and the potential environmental impacts outlined in section 6.

2.2.1 Capital Investment Programme

This element of the programme includes the following components:

- track renewal over 35km of life-expired sections of the track between Samtredia and Agara (10km east of Khashuri on the main line - see Figure 1). The programme will involve complete track replacement, including supply and installation of new ballast and the re-profiling of track formation to eliminate problems with track drainage;
- track replacement equipment to complement the track renewal programme;
- replacement of bridge sleepers and the repainting of selected bridges;
- reinstatement of the signalling system; and
- the extension of the fibre optic communications line east from Samtredia.

2.2.2 Technical Assistance and Restructuring

The principal components of this portion of the programme are:

- the separation of policy and operating responsibilities in the railway sector with SR being established as a government owned joint stock company;
- the need for SR to be managed according to commercial principles and the division of the freight and passenger businesses into separate profit centres;
- the drafting of a 5-year Business Plan.

3 LEGISLATIVE FRAMEWORK

This section provides a brief overview of the environmental administrative structures and requirements for Georgia which relate to the operations of SR. Volume II of this report contains further details on all aspects of the requirements for environmental protection in Georgia.

3.1 Environmental Administration and Agencies

The Ministry of Environment is the main state regulatory body in the field of environment. It consists of several departments responsible for a variety of activities including environmental policy, economics and education.

The principal responsibilities of the Ministry of the Environment are to implement Georgian legislation on environmental issues and to set standards and provide guidance. The principal statutory instruments involved are:

- the Environmental Protection Act (1997);
- the Protected Areas Act (1997);
- State Ecological Examination Act (1997); and
- the Law on State Ecological Examination (1997).

Of these the Environmental Protection Act (EPA) forms the legal basis for the other statutory instruments as well as the provisions on Environmental Impact Assessment.

The environmental standards used in Georgia under the Soviet Union were based on Maximum Allowable Concentrations (MACs). MAC's set by various departments of the Ministry of Environment exist in relation to the discharge of wastewater and emissions to air. However, implementation of these standards has not been successful as they were often unrealistic. Currently new standards are under development-based EPA provisions although the principal progress in this area will depend on new water and air laws replacing the 1974 and 1981 Soviet Union laws.

Environmental legislation, standards and guidance apply equally to private and public sector enterprises. In practice, however, little attention has been given by SR to environmental issues and their current environmental team do not posses the resources to ensure the implementation of environmental legislation and guidance. An early requirement of the a restructured SR would be to instigate the establishment of an inventory/database of all relevant legislation and guidance applicable to their operations.

Currently the Ministry of Environment have no information on railway activities and do not know whether railway operations comply with existing standards or to what extent they differ.

3.1.1 Interface with Georgian Railways

As mentioned above the principal responsibility of the Ministry of Environment is to set the regulatory standards and guidelines for Georgia and to monitor their implementation and compliance through the issue of environmental permits.

The Ministry of Environment believe the environmental group within SR to be under-funded and under-staffed and the only interaction between both organisations tends to be in response to a major pollution incident.

Emergency response planning is discussed in more detail in Chapter 6, but in essence liaison between the various parties when a major pollution incident occurs is poor. As mentioned above SR have neither an emergency response team nor established procedures for post-emergency clean-up. As a result the Ministry of Environment harbour serious concerns that pollution problems are not adequately cleaned-up.

4 CURRENT ENVIRONMENTAL PROBLEMS

Discussions took place during the project with a number of individuals both in SR and the Ministry of Environment regarding the current environmental problems of the railway and how they might be addressed. These individuals were:

- Solomon Tsabadze, Head, Department of Environmental Permits and State Ecological Examination (Ministry of Environment).
- Otar Turmanidze, Deputy Head, Department of Environmental Permits and State Ecological Examination (Ministry of Environment).
- Ekaterina Khmaladze, Head, Division of State Ecological Examination (Ministry of Environment).
- Tornike Kupatadze, Head, Scientific and Technical Progress and Information Division (SR)
- Prof. Marat Tsitskishivili, Environmental Specialist (SR)

Site visits were also undertaken to the sidings and oil terminal at Gachiani, east of Tbilisi. As mentioned previously, there has been an enormous decline in traffic on SR since the break-up of the Soviet Union. This has led to a corresponding fall in revenue and this lack of financial stability combined with hostilities in some parts of the country have meant that there is a huge backlog of investment and maintenance on the railway. Virtually every aspect of SR has suffered, resulting in large scale environmental problems principally related to the carriage of oil and other hydrocarbons on the network.

These problems can be summarised under four headings:

- major oil spills resulting from damaged track causing derailments or poor rolling stock;
- pollution along the track at train stopping points and river crossings;
- widespread pollution and contamination issues at loading and unloading terminals; and
- waste management.

4.1.1 Major Oil Spills

Major oil spills are the largest cause of environmental concern both for the railway and the Ministry of Environment. During 1998, up to the time of writing, there had been four major incident.

Supsa

At Supsa - on the line from Samtredia to Batumi near the Black Sea coast - the derailment of an oil shipment caused widespread pollution: four dwellings were affected along with local roads and fields. The railway paid for the clean-up operation and excavated the affected soil to 1m depth. The Ministry of Environment are still not satisfied that the clean-up has been conducted thoroughly.

Vale

At Vale, which is off the mainline east of Khashuri, another derailment of an oil shipment caused pollution of a local watercourse.

Gachiani

Gachiani is a mainline station and wagon marshalling yard east of Tbilisi. During the summer a major fire and oil spill occurred when a number of oil tankers caught fire in the high temperatures.

The Ministry of Environment is most concerned to reduce the likelihood of a major oil spill within a national park. The mainline passes through the Borjomi National Park (see Figure 2) for some 20km and the secondary line through the Park between Khashuri and Vale for some 50km. The Borjomi National Park is considered as a most sensitive area and several minor rail incidents have occurred within the Park

In addition there is a particularly difficult section of track between Zestaponi and Khashuri where the mainline traverses the valleys of the River Kvirila and Dzirula. Some of the track radii in this section are only up to 200m and derailments have occurred.

4.1.2 Track Pollution

The Ministry of Environment believe pollution along the track to be a potentially major, yet still unquantified problem. The most serious concerns are where trains stop near rivers and important water abstraction points - so called 'hot spots' by the Ministry of Environment - and oil and other contamination from the stationary train leaks onto the track.

The Ministry of Environment would wish to see a thorough audit of the railway track in order to identify where these hot spots are and to propose measures such as adequate drainage and oil interceptors to counter the potential problem.

The Ministry of Environment also point to concerns of more widespread track bed pollution resulting from the use and maintenance of wooden sleepers. Wooden sleepers tend to cause track bed pollution resulting from their treatment with creosote designed to prolong their use. Creosote is distilled from coal and contains naphthalene, thenol and anthracene all of which will be washed into the track ballast. The proposed track replacement programme should go some way to alleviate this problem but in the longer term all wooden sleepers will clearly need to be replaced.

4.1.3 Pollution at Loading/Unloading Terminals

Pollution at loading and unloading terminals is a further cause of concern for the Ministry of Environment. Again, the Ministry would wish to see these facilities properly managed on environmental grounds with the provision of appropriate wastewater treatment systems, drainage and oil interceptors.

4.1.4 Waste Management

The Ministry of Environment would like to see a thorough review by SR of the quantity, type and disposal mechanisms of the waste produced by the railway - both solid and liquid. They would also like to see a review of the projected increases in waste arisings given the anticipated increases in traffic with the future development of the central Asian oilfields.

There is currently no legislation in place in Georgia on solid waste management but the Ministry of Environment would like to see SR introduce their own code of practice pending state legislation.

Other issues of concern in this area include the storage of chemicals and hazardous substances.

Other issues, not specifically mentioned by either SR or the Ministry of Environment are likelt to include fuel storage, train washing and contamination at maintenance depots and marshalling yards.

5 PROJECT ENVIRONMENTAL IMPACTS

5.1 Capital Investment Programme

5.1.1 Introduction

The immediate impacts of the overall investment programme are likely to be those which will result from the capital elements and will relate principally to the track replacement programme. Environmental impacts will include potential problems arising from the removal of contaminated ballast and the disposal of waste.

5.1.2 Track renewal

Track renewal will take place over 35km of life expired sections of the track between Samtredia and Agara (10km east of Khashuri on the main line - see Figure 1). The programme will involve complete track replacement, including supply and installation of new ballast and the re-profiling of track formation to eliminate problems with track drainage. The proposed renewal will be with concrete sleepers fastened with elastic fasteners.

Overall the impact of track replacement is likely to have a beneficial effect on the environment by reducing the potential incidence of derailments and hence major oil spills. If a major incident does occur, improved signalling and telecommunications should greatly enhance the response time of the emergency services and decrease the potential contamination effects.

The principal environmental problems which are likely to be encountered include:

- the disturbance of contaminated land and contaminated clinker during the track replacement programme and the necessity of ensuring the safe disposal of such material;
- the requirement to ensure that such contamination does not enter the groundwater system;
- noise and vibration impacts associated with track laying and tamping of ballast;

5.1.3 Bridge sleeper replacement

Again, the replacement of bridge sleepers is likely to have an overall beneficial effect on the environment by significantly reducing the potential for derailments. There will be the potential for contamination of watercourses during sleeper replacement brought about by the disturbance of contaminated ballast and the need to either clean or replace it.

5.1.4 Signalling and telecommunications

Similarly new signalling and telecommunication systems will significantly improve the environmental performance of the railway by increasing response times for polluting incidents on the track.

Other impacts that may occur include:

- noise arising from new signalling equipment during construction and operation; and
- possible electromagnetic effects of new signalling equipment.

5.2 Restructuring

The 5-year Business Plan for the railway, developed as part of this project, recommends the division of SR into a number of strategic business and service units. It is proposed that SR has two main business units:

- a passenger business unit; and
- a freight business unit.

These will be served by two new service units, namely:

- rolling stock; and
- infrastructure

Two further units will provide the overall corporate functions for the restructured railway. These will be:

- corporate services (including, *inter alia*, finance, procurement, IT and legal services); and
- ancillary services.

The reorganisation of SR into these units will create a number of new environmental challenges which will cover the entire operations of SR from the disposal of waste, through the procurement of new rolling stock to good office working practices.

5.2.1 Passenger Business

The following key areas are considered to have a potential impact on the environment during the period of the first 5-year Business Plan.

Passenger stations improvements
- construction impact of new buildings or changes to existing buildings;
- noise and vibration arising from construction;
- chemical or fuel pollution of water courses arising from demolition and construction;
- alterations to services; and
- Increased road feeder traffic.

Closure of passenger stations
- disposal of waste materials;
- disconnection of services; and
- clean-up of site area

New Passenger Coaches
- Environmental benefits include:
    - controlled emission toilets and the non disposal of effluent to track;
    - reduction in noise and vibration due to better suspension although there will be a potential corresponding increase in noise and vibration due to the increased speed of trains.

5.2.2 Freight Business

Freight Business developments and key activities included in the 5- year Business Plan that may have an environmental effect include:

- reduction of sidings at two marshalling yards at Samtredia and Tbilisi Sort;
- closure and removal of equipment at several current freight stations - locations undefined at present;
- removal of tracks and cranes;
- removal of redundant buildings; and
- changes to services at various locations.
- concentration of freight activity at main centres - locations undefined at present;
- new handling equipment;
- increased road vehicle effect;
- possible new buildings and services including the creation of improved and new container terminals; and
- increased risk of incidents due to more trains although mitigated through better track and signalling control

5.2.3 Rolling Stock Service Unit

The Rolling Stock Service Unit will be responsible for the purchase and maintenance of all rolling stock including all locomotives, wagons and carriages. It will also be responsible for the disposal of old rolling stock.

Large volumes of industrial waste will be generated by the restructuring of the railway and the need to scrap redundant track and rolling stock. Well in excess of 0.5 million tonnes of industrial waste will need to be disposed of. Particular problems are likely to include:

- scrap metal;
- asbestos in coach linings;
- PCB's in diesel locomotive transformers;
- plastic seating;
- de-greasing agents;
- oils and heavy metals including lead, chromium, magnesium and zinc in coach wagon and locomotive components; and
- CFC's in refrigerated wagons.

A waste disposal strategy will need to be developed which will form part of the SR's Environmental Management Plan (see section 6). The Environmental Management Plan will need to include procedures for the safe stripping of contaminants and the occupational health and safety issues that will also arise. Most of the waste will need to go to dedicated industrial waste landfill sites. Although there may be scope for recycling/reusing some components.

5.2.4 Infrastructure Service Unit

The Infrastructure Service Unit will be responsible for train control, signalling, communications, electrical and permanent way infrastructure.

Environmental issues will include:

- the safe disposal of surplus line side scrap after track work;
- disposal of old ballast;
- operation of stone quarries;
- visual impact of electrification masts;
- ballast dust whilst track renewal works are in progress; and
- noise whilst work is in progress.

5.2.5 Corporate Services and Health and Safety

The key issues related to the Corporate Services provided for the Georgian Railways reflect the movement towards commercialisation over a 5 year period. The Business Plan has specific targets to be achieved year on year during the period of the plan and these include:

- provision of high quality support services to meet business sector needs;
- co-ordination of policy planning activities to present integrated plans;
- provide centralised accounting and administration for strategic purposes; and
- provide a centralised legal function on a company-wide basis.

Items which will need addressing in respect to environmental impact include:

- recycling;
- office environment;
- IT;
- health and safety; and
- accommodation

The main requirements of each activity during the 5 years are as follows:

Corporate planning
This unit will provide policy support to the business units and DG. The environmental issues relate to:

IT and Computer systems
The section will employ around 120 people providing installation and support to the businesses throughout Georgia. The main objectives will be to implement comprehensive modern computer systems and networks to assist business productivity and performance . This should include connections with neighbouring railways. The Information Computing Centre is well equipped with modern computers and there are also computers at other enterprises, stations and depots.

Finance and Control
This section provides accounting and audit support to the businesses through application of networked financial packages. The section will employ 80 personnel mostly HQ based but travelling to offices throughout the network. The plan envisages implementation of robust financial procedures and systems, linked to an IT strategy for development step by step over the 5 year period of the business plan. The key tasks of the function are to prepare and co-ordinate the corporate budget and forecasts and will be responsible for Treasury and Cash control, accounting procedures and debt management.

Procurement
This section will be responsible for the tendering and central purchasing of services and equipment for supply to the businesses . Where appropriate outsourcing procedures will be developed and implemented. Comprehensive capability will be achieved in the first year of the plan and enhanced during the next 4 years of the plan.

Real Estate
The management of property disposal, rent and development will be handled by this division . These will include valuation and presentation to the market working as a support to the businesses to identify and categorise land as operational and non-operational. An action plan will be developed for implementation during the 5 year period of the plan to dispose of redundant land and exploit commercial opportunities.

Organisation

The organisation section will be responsible for the support to the businesses in implementing the new structures . This division will operate for 2 years then be absorbed within the Human Resources section The key responsibilities will be to establish organisation principles in the development of the corporate plan.

6 COPRPORATE ENVIRONMENTAL MANAGEMENT PLAN

6.1 Introduction

As mentioned previously, the adoption of an overall environmental management system (EMS) for SR, incorporating an Environmental Management Plan (EMP) will be both a fundamental requirement for the loan disbursement to the railway and make good business sense.

The fundamentals of the EMP are:

- the establishment of the correct corporate structure;
- an audit of existing facilities and operations in order to fully understand the current environmental problems which SR are facing;
- a thorough legislative review and a comparison with the current compliance status of SR;
- development of priority action plan;
- setting of targets and timescales for meeting the priority action plan.

6.2 Corporate Structure

The 5-year Business Plan envisages the formation of two business units (freight and passengers), two service units (infrastructure and rolling stock) and two corporate units. Each of these units will have a Director who will report to the Director General. It is proposed that a new role of Corporate Environmental and Health and Safety Manager is also created reporting directly to the Director General and with Board level responsibility for environmental issues company wide.

It will be the function of the Corporate Environmental and Health and Safety Manager to set the overall corporate objectives for environmental management in SR, prepare the detailed EMP, and to agree overall company-wide directives or policies on issues such as waste management, recycling and energy conservation.

The Corporate Environmental and Health and Safety Manager will have an Assistant Manager located within each of the service, business and corporate units forming a team of seven senior individuals. The Assistant Managers will be responsible for the implementation at unit level of the Environmental Management Plan including setting targets for their business sector, monitoring progress and providing training to key individuals within the various sections of their unit.

6.2.1 Corporate Environmental Commitment

The first priority of the new EMP for the railway will be to develop a corporate environmental commitment which may be embodied in an overall Mission Statement and to set clear goals for environmental improvement over the life of the first 5-year Business Plan. An appropriate Mission Statement may be:

"To transport freight and passengers, quickly, efficiently and safely by offering a high-quality cost-effective service that has due regard for the environment of Georgia. To meet its commitments to environmental protection, as embodied in the Environmental Protection Act and International treaties, SR will implement an Environmental Management Plan that will progressively reduce its consumption of resources, emissions of pollutants and seek to provide for the improvement of environmental management practices in its operations and facilities"

Such a statement should be agreed and signed by the Board of SR and disseminated to all employees.

6.3 Environmental Management Plan

It will be the principal responsibility of the Corporate Environmental and Health and Safety Manager to prepare and implement an Environmental Management Plan (EMP) for the railway. This section will outline the framework for the plan, the actions required, priorities that have been identified and potential monitoring requirements. Section 8 will identify implementation requirements including responsibilities, training and support. The framework for the EMP has been discussed with:

- Tornike Kupatadze, Head, Scientific and Technical Progress and Information Division (SR);
- Prof. Marat Tsitskishivili, Environmental Specialist (SR); and
- Solomon Tsabadze, Head, Department of Environmental Permits and State Ecological Examination (Ministry of Environment).

6.3.1 Framework

The framework for an EMP for SR will need to be structured around the following elements:

1. a thorough environmental audit of all SR operations and facilities;
2. the compilation of a legislative database that clearly defines the legal responsibilities of SR towards the environment and contains procedures for updating it regularly;
3. a comparison between the audit findings and the legal responsibilities of SR;
4. a definition of the areas for improvement;
5. a prioritisation of these areas;
6. a set of clear, measurable and auditable targets for improvement; and
7. a timescale for measuring progress towards these targets.

6.3.2 Audit

SR will need to conduct as a first priority a complete audit of all its operations and facilities. These will include, *inter alia*, all freight depots, passenger stations and maintenance depots as well as office practices, heating, lighting and recycling.

Particular attention will need to be paid to those areas likely to give rise to the greatest environmental problems and these will include:

- emissions to air;
- water and waste water - use and disposal;
- materials handling, storage and transport;
- management of hazardous materials;
- waste arisings, management and disposal;
- noise, odour and vibration; and
- land contamination.

With regard to operations attention will need to be given to the priority areas identified by the Ministry of Environment. These include:

- pollution along the track at train stopping points and river crossings and the identification of areas most at risk from contamination - so called 'hot spots'; and

- identification of the causes of derailments and oils spills and an audit and review of the success of clean-up initiatives where these have occurred.

The audit will need to be undertaken by appropriate trained personnel (see section 7) familiar with the operations of the railway and be conducted according to current best practice in environmental auditing. A checklist system is recommended for the audit, covering *at a minimum*, those areas listed above but also where possible examining other issues such as general housekeeping and identifying potential improvement areas such as waste reduction, opportunities for the use of cleaner technology and energy use and conservation.

The audit should be based on:

- discussions with facility personnel;
- an examination of past records relating to emissions and discharges and incidents; and
- on-site testing and monitoring where records do not exist or are incomplete.

An appropriate starting point for the environmental audit could be the 'ecological passport' system. Of the approximately 60 railway facilities that exist currently none have valid ecological passports. It is estimated by SR that around 12 facilities could be audited each year completing the initial round by the end of the first 5-year Business Plan. Under the present system a passport is valid for five years and it is recommended that this system is retained on a rolling five year basis coinciding with the business plan.

6.3.3 Regulatory Compliance

Volume II of this report provides a review of the current legislation and guidance that SR will need to comply with. At present it is unlikely that SR hold any of the necessary certificates to show that it is in compliance with regulatory requirements in relation to emissions to air, water and solid waste management.

Based on the review undertaken for this report, SR should instigate the setting up of a database of all legislation that it needs to comply with. The database should maintained centrally but must be accessible to each facility so that individual facility managers are fully aware of their commitments and compliance status.

A comparison will need to be made by SR of the audit findings and regulatory compliance status. Given the history of the railway and the current backlog of investment and maintenance there will be a need for SR to bring many of its facilities and operations into compliance. These areas will need to be prioritised and clear and auditable targets set for achieving compliance within a timescale appropriate to the scale of the problem and the measures required to deal with it.

6.3.4 Priorities for improvement

A number of priority areas and issues will arise from the environmental audit and compliance status of SR and appropriate environmental action plans and remediation plans established. A full audit of the railway is a lengthy process and one which was outside the scope of this report. However, discussions between SR and the Ministry of Environment, revealed a number of immediate issues which SR will need to address. These are:

- major oil spills resulting from damaged track or poor rolling stock;
- emergency response planning
- pollution along the track at train stopping points and river crossings;
- widespread pollution and contamination issues at loading and unloading terminals; and
- waste management.

(a) Oil Spills

The avoidance of oil spills, particularly in the sensitive national parks is a major area of concern for the Ministry of Environment. This concern will increase as traffic grows with the opening of new oil fields such as the Tengiz crude oil field operated by Chevron in Kazakhstan and the passage of other oil products from SOCAR (the State Oil Company of Azerbaijan) and from Turkmenistan.

Derailments leading to oil spills will be a consequence of several factors either operating individually or in concert. These factors will include:

- the condition of the track;
- the configuration of the wagon bogies;
- speed of the train; and
- the radius of track curvature;

The track replacement programme which is underway in Georgia and the investment in new track brought about by the EBRD loan, will greatly assist in improving track conditions and hence safety and environmental concerns.

The configuration of the wagon bogies, particularly those which pass through sensitive areas will need to be examined closely. Standard bogies consist of two axles, each with four wheels and the majority of oil transport wagons in use currently seem to conform to this pattern. However, recent developments have included the introduction of four axle bogies supporting a total of sixteen wheels. It is likely that this configuration, allowing a 160 tonne laden load to be transported, is more susceptible to derailment particularly on tight radius curves.

It is not known what caused the recent derailments in Georgia as this information was not available but an urgent priority of the Environmental Management Plan should be to examine closely the statistics relating to derailments and examine any correlation between bogie configuration, speed and curvature. This analysis should result in actions items for the EMP which may:

- make recommendations not to run four axle bogies through sensitive zones and/or limit their speed through such areas;
- place speed restrictions on trains through sensitive zones; and
- recommend possible track re-configuration through sensitive zones to avoid tight radius curves.

In addition, the EMP should clearly state the importance of ensuring that wagons are securely sealed before departure.

(b) Emergency Response Planning and Clean-up

Allied to the problem of oil spills, SR will need to enhance its emergency response planning and clean-up procedures both of which the Ministry of Environment have expressed concerns about.

New signalling and telecommunications will greatly assist in the response time of emergency services but, nonetheless, the EMP will need to address emergency response planning. It should be recommended that an Emergency Response Directive is drafted which will include the formation of an *ad hoc* Emergency Response Group (ERG) chaired by the Corporate Environmental Health and Safety Manager and formed from key members of SR in the other directorates *and* appropriate officials from the Ministry of Environment.

The responsibility of the ERG would be to receive information on an emergency situation, assess the response required and mobilise the necessary resources to limit the potential.

Acting alongside the ERG, SR will need to recommend, as part of the EMP, the formation of an Emergency Response Unit, formed from railway personnel and trained in containment and clean-up procedures.

Clean-up procedures should be sanctioned by the ERG, which as it will also contain Ministry of Environment officials, will be able to co-ordinate and agree actions.

(c) Stopping points and river crossings

The environmental audit should identify stopping points for trains in potential 'hot spots', that is those areas near to water abstraction zones, in national parks or in other ecologically sensitive areas.

The scale of any potential contamination problem will need to be assessed in these areas through ground investigations and potential remediation measures sought. Remediation measures which may be recommended in the EMP include:

- the avoidance of stopping locomotives in potential 'hot spots';
- oil trap mats in sensitive areas and on bridges to absorb spillage from tanks and locomotives.

(d) Loading/unloading terminals

Again the scale of the problem will need to be addressed through the environmental audit and potential remediation problems identified as part of the environmental action plan.

As part of this project the Gachiani oil loading terminal near Tbilisi was visited. The facility is a modern one where oil from Georgian oilfields is transferred direct by pipeline to the terminal for loading onto tanker wagons. A limited site inspection showed it to be a relatively clean facility with good drainage systems and apparently oil interceptors.

The Gachiani terminal is a clear illustration of what can be achieved by good design and investment and the EMP will, similarly need to recommend appropriate drainage, water treatment and oil interceptor systems for loading/unloading terminals.

For existing facilities clean-up operations appropriate to the scale of the problem will need to be recommended in conjunction with the longer term measures noted above.

(e) Waste management

Waste management will be a major issue for the restructured railway given the enormous surplus of rails, sleepers, locomotives and wagons that will need to be disposed of.

Much of this will contain toxic substances including:

- asbestos in coach linings;
- PCB's in diesel locomotive transformers;
- plastic seating;
- de-greasing agents;
- oils and heavy metals including lead, chromium, magnesium and zinc in coach wagon and locomotive components; and
- CFC's in refrigerated wagons.

A waste disposal strategy will need to be developed which will form part of the SR's Environmental Management Plan. The EMP will need to include procedures for the safe stripping of contaminants and the occupational health and safety issues that will also arise.

Procedures will need to be put in place to ensure that the waste goes to dedicated industrial and special waste landfill and/or incinerator sites and to ensure its safe transport to such sites. These sites will need to be identified as part of the EMP.

For the future the EMP will need to recommend current best practice in waste management based on the waste hierarchy of:

MINIMISE
⇓
RE-USE
⇓
RECYCLE
⇓
INCINERATE
(with energy recovery)
⇓
LANDFILL

As far as legal compliance with waste management regulations is concerned Georgia does not currently have any legislation in place although it is understood that this is currently being drafted. The EMP should ensure that it contains both a commitment to comply with this new legislation when it is on the statute books and to work towards compliance from now on.

6.3.5 Targets and timescale

It is essential that SR sets a series of clear targets with respect to regulatory compliance and good environmental management practice and provides these targets with an appropriate timescale. Ambitious targets are unlikely to be met, no targets at all will mean that compliance will not be achieved and the timescale must similarly being realistic to the goal that has been set.

Specific targets for operational performance in relation to issues such as wastewater discharges and air emissions can only be set by reference to current performance which itself can only be measured through the environmental audit. A thorough detailed audit is, therefore a first priority.

A reasonable timescale in which to audit all facilities would be five years, coinciding with both the ecological passport system of SR and the rolling business planning round. For the emission and discharge of specific pollutants timescales are less easy to define as they will depend on the scale of the problem and the financial resources required to address it. Priority should be given to addressing the concerns voiced by the Ministry of Environment and indeed some of these could be rapid and low cost. Critically examining the accident record, for example, and recommending lower speeds and/or bogie configurations does not require a significant investment.

7 RESOURCES, IMPLEMENTATION AND SCHEDULING

7.1 Institutional Issues

The principal roles of the Corporate Environmental and Health and Safety Manager and the Assistant Managers within the Directorates of the restructured SR have been described above. For the environmental performance of the railway to improve it will be critically important that:

- the new Board of SR take the environmental commitments of the railway to be a central part their overall corporate strategy;
- the roles and responsibilities of the Corporate Environmental and Health and Safety Manager and the Assistant Managers within the directorates are similarly recognised to be of central importance within the company;
- these individuals are given appropriate authority through the reporting structure of the organisation;
- where necessary the required funding, resources and/or support is made available to bring about environmental improvements to the operation of SR;
- environmental training is provided where necessary; and
- the Board of SR have a transparent reporting structure so that both employees and the general public are made aware of their environmental performance.

As well as the key environmental managers within the company it will be equally important for all facility managers and indeed all employees to have an increased awareness of their role within the overall environmental performance of the company. In particular there should be:

- an individual and collective duty of care towards the environment;
- a roll-down of company environmental commitments to the site specific level; and
- a requirement amongst all employees to review environmental performance specific to their activity within the company.

7.2 Training

7.2.1 Corporate Environmental Manager and Assistant Managers

Professional training will be required for those individuals who will fulfil the key environmental roles within SR. This will need to be undertaken as part of the implementation schedule for the EMP and involve formal courses in environmental management and auditing, probably through an overseas institution (for example, the UK Environmental Auditors Registration Association - EARA) as well as short periods of secondment in Europe to rail companies that have developed EMP's, for example Railtrack in the UK or any of the European railway companies.

It will also be important for these individuals to be given guidance and training in the further training of those individuals at specific facilities and operations in SR who will be instrumental in implementing the EMP. This 'train-the-trainers' approach will ensure that corporate environmental goals are linked to site-specific practices

7.2.2 Facility and operations managers

Operational level individuals with responsibility for site specific environmental performance will be trained by Assistant Corporate Environmental Managers attached to each of the six directorates.

Training needs will be governed by the needs of the specific facility but will need to include technical issues such as the:

- guidance in the preparation of environmental management plans and action plans for their specific facility;
- guidance on follow-up site audits; and
- guidance on specific monitoring requirements.

7.3 Communications

The success of the EMP will be dependent on effective communication between the corporate environmental managers and the facility and operations managers who will have day to day responsibility for its implementation.

At the corporate level information will need to be rolled down to operations and facilities: This information will include:

- changes in environmental legislation or guidance affecting the facility or operation; and
- corporate policy or directives on issues such as energy efficiency, waste management, waste minimisation and recycling.

Similarly upward channels of communication will need to be open from facility managers to directorate level. This will enable early problems in meeting targets to be recognised and addressed as well as potential opportunities for further improvement incorporated into the corporate strategy.

7.4 Implementation and scheduling

Implementation of the EMP will not be simple or rapid and this should be recognised at the outset in order to avoid unrealistic expectations. A suggested implementation schedule over the course of the first 5-year Business Plan may be as follows and in Table 1 overleaf.

ACTION ITEM	SCHEDULE (within 5 year plan)
Agree corporate policy	Month 1
Dissemination to staff	Month 1
Training of environmental managers	First 6 months and on-going
Training of operational managers	Months 6 - 9 and on-going
Begin audit of facilities	Begin month 9 - end of year 5
Register/database of legislation	Complete by end of year 1
Establish priority actions	Complete end of month 18 and on-going revision
Begin priority actions	Begin month 18 and on-going
Monitoring	On-going

8 CONCLUSIONS - CURRENT PROBLEMS FUTURE ISSUES

This report has examined the current environmental problems facing Georgian Railways and the likely impacts that will arise through the proposed investment programme of the EBRD/EU-Tacis and through the restructuring of the railway.

The investment programme will largely generate environmental benefits through improved track, track maintenance, signalling and telecommunications. However, it is important that the environmental impacts that could arise through these activities are also understood and addressed.

By far the largest environmental challenges that will face the railway will arise through the restructuring of SR and its division into separate business and service units. The railway is faced with a large stockpile of redundant equipment, wagons and locomotives, and by significant problems of land contamination and emissions, non-compliant with current legislation and best practice.

An Environmental Management Plan for the railway is both an essential requirement of the loan disbursement and makes good business sense for the restructured railway. The EMP which has been outlined in this report, and discussed with relevant officials in the Ministry of Environment and SR, sets out a framework for the future. It is essential that the overall corporate objectives outlined in the EMP are fully integrated into the planning of SR and that the new Board gives due consideration to the serious nature of the environmental issues it will face.

The reversal of years of neglect of environmental problems will not be without cost and it will be for the new Corporate Environmental Manager of SR to prioritise actions and seek Board approval for funding. It will be important for the future viability and profitability of the railway that these issues are dealt with as a matter of urgency.

9 FIGURES

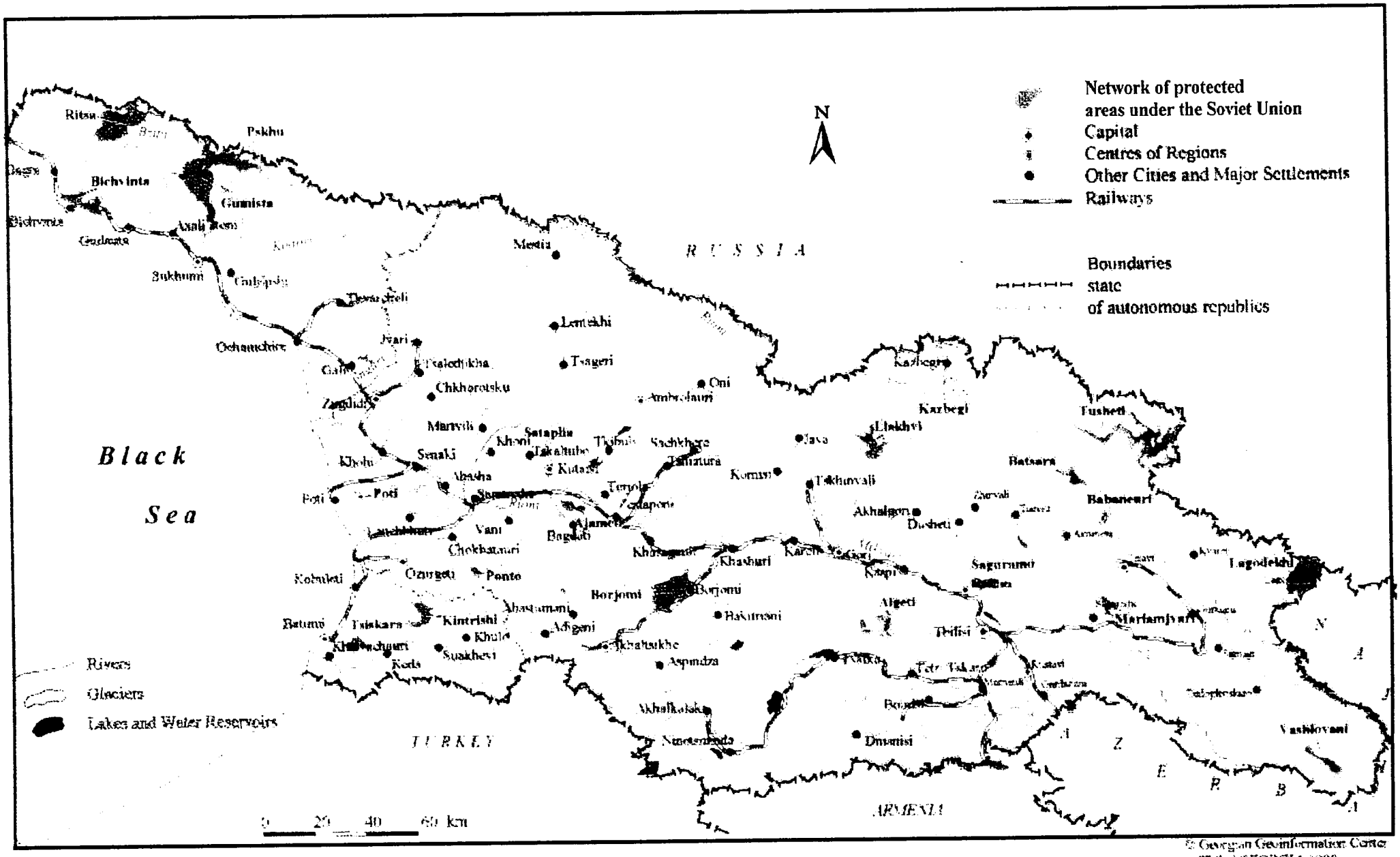

Figure 1 GEORGIA RAIL NETWORK

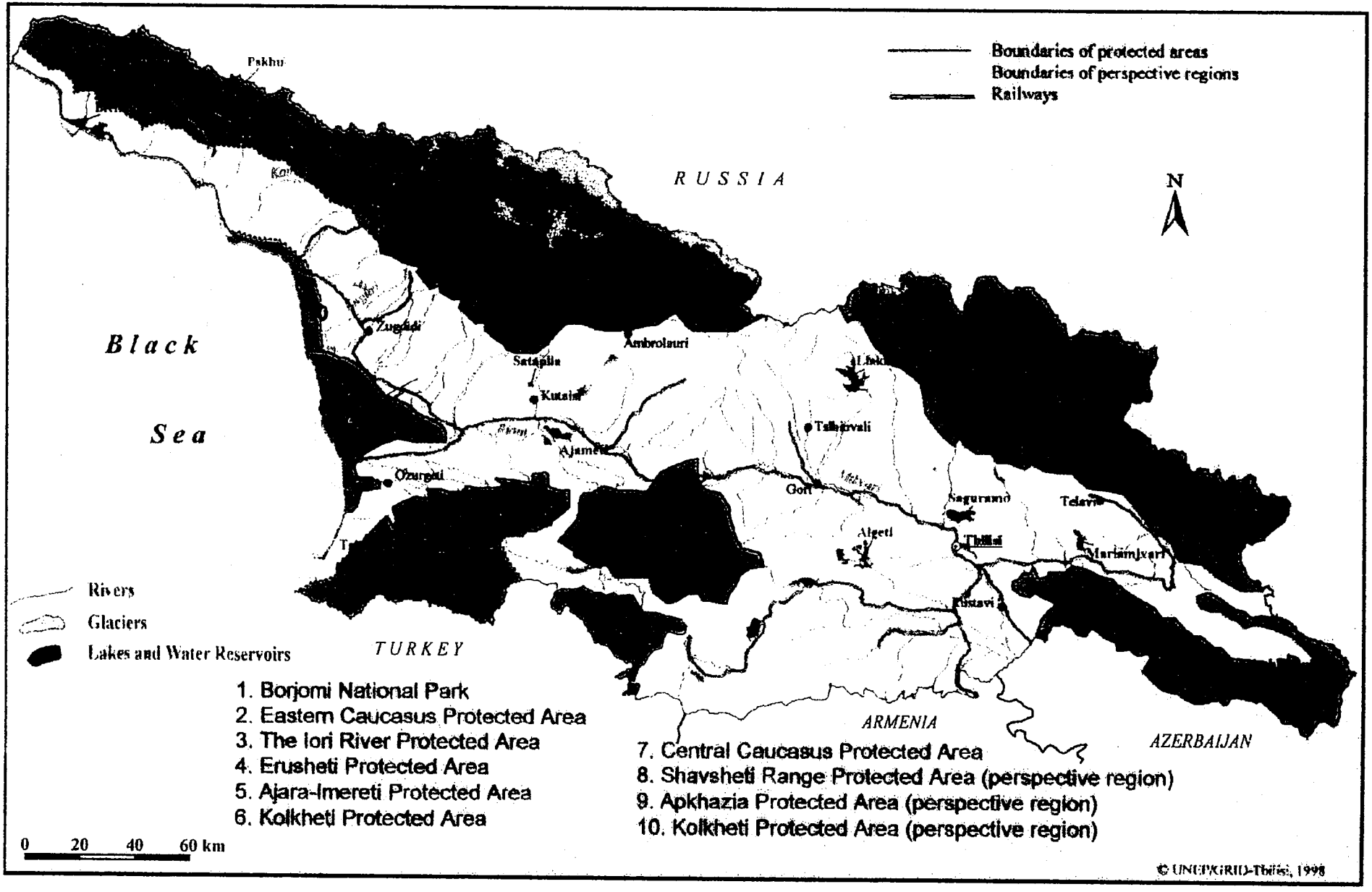

Figure 2 NATIONAL PARKS AND PROTECTED AREAS

Restructuring of Georgian Railways

ENVIRONMENTAL MANAGEMENT PLAN

Volume II

Environmental Administrative Structures and Requirements

Restructuring of Georgian and Azerbaijan Railways

ENVIRONMENTAL MANAGEMENT PLAN GEORGIAN RAILWAYS

Volume II

Environmental Administrative Structures and Requirements

CONTENTS

1 ENVIRONMENTAL ADMINISTRATIVE STRUCTURES

Georgia is a democratic republic composed of 53 administrative regions and 2 autonomous republics: Autonomous Republic Abkhazia (Sokhumi) and Autonomous Republic Acharis (Bat'umi).

The foundation of Georgian Environmental legislation lies with the new Georgian Constitution, adopted on 17 October 1995, and the Land Code, 1984. The Constitution of Georgia stipulates "the right of citizens to life in favourable environment, to have access to reliable information on its actual condition and to be compensated for any damage caused to health and to wealth by environmental infringement". The Constitution establishes a general responsibility of every citizen to protect environment and natural resources. The Land Code establishes a right to information regarding state of environment, stipulating that the concealment of circumstances creating a threat to the life and to the health of people shall involve legal responsibility in accordance with the Georgian Legislation.

1.1 Environmental Administration and Agencies

Legislative and executive powers in Georgia are mainly centralised. The Parliament is the major body involved in passing laws. Drafts are elaborated and debated in several Parliamentary Commissions, prior to debate in a plenary session of the Parliament. Several administrative bodies take part in the elaboration process. Key actors in the field of environment are the Commission on Environmental Protection and Natural Resources of the Parliament and the Ministry of Environment of Georgia (full name is Ministry of Environment and Natural Resources Protection)

After the reorganisation of structure of Georgian Government in 1995, when the Cabinet of Ministers was cancelled and the position of State Minister was created, all Ministries are empowered to elaborate and implement the state policy for relevant sector. The President, as highest executive authority, controls and supervises the general direction of such sectoral policy.

The Ministry of Environmental Protection is the main state regulatory body in the field of environment. It consists of several Departments responsible for different activities: the Department of Environmental Policy and International Relations; the Department of Environmental Economics; the Black Sea Protection Convention Department; the Department of Environmental Education, Popularisation and Public Relations; and the Press Centre. The Ministry has regional (municipal) Department of Environment in every administrative region of the Republic of Georgia.

The Ministry of Environmental Protection and its regional representatives are state bodies responsible for environmental protection on the territory of Georgia. They coordinate activities of other state committees in the field of environmental protection: Hydrometeorology Department, State Ecological Examination Department, Water Resources Protection Department, etc. The Ministry of Environmental Protection administrates directly more than 60 regional committees and inspectors. Other committees, departments and agencies also play important role in establishing and enforcing environmental legislation and health and safety issues. Enforcement and inspection take place at the national, regional and local levels.

The main responsibilities of the Ministry of Environmental Protection include:

- Comprehensive management in the area of environmental protection;
- State control and monitoring of the use and preservation of natural resources, and monitoring compliance with ecological safety standards;

- General organisation and coordination of environmental monitoring and control;
- Approval of standards and regulations, participation in the development of standards regulating natural resources utilisation and protection of the environment
- Conducting the state environmental reviews;
- Lawsuits demanding compensation for damages as a result of violations of environmental protection legislation.

1.2 Permitting Authorities

The set of standards used in Georgia under the Soviet regime was based on so-called Maximum Allowable Concentrations (MACs). Such MACs, set by several departments of the Ministry of Environment, still exist in relation to discharge of waste, water quality and emissions to air. Implementation of standards has not been successful: the standards were often unrealistically strict and the economy did not allow implementation of such strict standards. At present, new type of standards are under development, based on EPA provisions. Although, the principal progress in this field depends on new water and air laws replacing the 1984 and 1981 Codes.

The procedure for permitting industrial installations is based on the law "On Environmental Protection", which includes the following aspects:

- maximum allowable (or permissible) concentrations of toxic pollutants (MAC or MPC) - these constitute the basis for developing standards of permissible environmental loading (MAC, known as "PDK" in Russian, is normally calculated in mg/m^3);
- maximum allowable level of noise, vibrations, magnetic fields, and other harmful agents;
- maximum allowable level of radiation;
- maximum allowable waste output per specific time limit and per specific agent (known as "PDV/PDS" in Russian) - set according to the specific function and conditions of the site;
- maximum allowable use of pesticides in agriculture;
- standards for environmental loading;
- maximum allowable standards for toxic substance residues in food products;
- the obligation to respect protected zones around any industrial or other type of site; and
- the requirement for final products to meet environmental standards.

PDK standards are determined for the following:

- specific air pollutants;
- specific surface water pollutants; and
- specific soil pollutants.

PDV/PDS norms are calculated for each industrial site on a time and pollutant basis as a function of the local conditions of site operations.
The "Temporary Allowed Waste Output" (known in Russian as VCV) refers to the limits imposed by the permitting authorities for industrial sites which cannot meet the PDV/PDS norms without changing its main production technology.

All permissible standards for industry environmental impacts are determined by state-empowered environmental protection agencies, state ecological examination committees and the state agencies for sanitary and epidemiological control. The Department of Sanitary and Epidemiological Control now work under the authority of the Ministry of Health.

These agencies are known as "SAS" and have a reputation for fierce resistance to whatever they consider as improperly prepared or poorly completed work in the field of industrial environmental impact assessments.

All industrial projects must be coordinated with both the Committee for Environmental Protection and with the Sanitary and Epidemiologic Control officials at the local level in cases where the project is of local importance. The project should be coordinated at both the state and local levels, however, if it is likely to effect several regions. Based on the predetermined standards, industrial sites are assigned allowances for waste output in all forms, including gaseous emissions, waste water/effluent discharges, and industrial, urban, or other solid waste.

1.2.1 Permitting Process

Land
The land on which an industrial installation is to be developed must be bought or leased. The local authorities in the region must be contacted in order to initiate the construction permitting process.

Project Authorisation
Once local authorities of the region has issued a Decree authorising the lease or sale of the land for development as an industrial site, the project will require further agreement from the following entities:

- local architectural authorities;
- local environmental authorities;
- local sanitary authorities (Ministry of Health, Department of Sanitary and Epidemiologic Control);
- local fire inspection;
- local technical inspection (Gostechnadzor); and
- local energy commission (for energy use limits) as there might be electricity shortages in some regions.
-

The control is normally accomplished in two stages:

- the preliminary stage covers the technical and economic foundation of the project;
- the final stage covers the working project itself.

Documentation Required
The most important issue is obtaining permission from the State Committee for Environmental Protection, which will require:

- the carrying out of an environmental impact assessment by a Georgian company holding a proper state license for such work or by officials of Sate Ecological Examination Department;
- a State Ecological Expertise, ordered by the Committee for Environmental Protection at the investor's own expense; and
- an (optional) Public Environmental Expertise. This step is not obligatory but can help to influence public opinion, particularly if carried out by experts with a serious reputation, and producing an independent ecological expertise of the project.

All documentation must be prepared in the Georgian language.

Working Project
The actual project implementation must be carried out by a specialised Georgian company properly certified for such activities, meaning it holds a special state license for designing industrial facilities. The basic western design will have to be adapted to Georgian standards in order to comply with the "Construction norms and rules" (standards, used in the soviet system but still in force).

Normally, the contractor that prepares the Georgian version of the working project documentation is also called upon to coordinate the project with all local authorities.

Property Registration
The purchase or lease of all lands is to be registered with the Department of Land Resources. Upon completion of construction, the project owner must register the constructed structures with the same Department of Land Resources, and obtain a certificate of property (without which no fixed property can be later sold).

This process can take from 30 to 90 days, depending on how well the basic documents have been prepared.

In the case of demolition of existing structures, agreement must be obtained from the owner of the land (if leased) and the State Architectural Committee (if buildings have any historic and/or cultural value).

All demolition must be registered with the Department of Land Resources.

On-Going Legal Support
On-going legal support is strongly advised for all such projects, making use of experienced and certified Georgian legal counsel holding state licences and contacts with local authorities and local institutes.

Environmental Permits
As mentioned elsewhere, environmental standards are established according to the region and the area in which the site will function.

1.2.2 Environmental Assessment

Information is not available at the moment. Waiting for documents to come. The environmental assessment procedures in Russia are presented below.

The coordination of industrial and other projects is carried out via the environmental expertise executed on the basis of, and in compliance with, the law "On Environment Protection" and on the basis of, and in compliance with, the Law "On State Ecological Examination". Their are two main forms of environmental expertise in accordance with the law: public (i.e., non-state) expertise and state environmental expertise.

Public (non-state) expertise
The public (non-state) expertise can be executed before, during, after and separately from the State environmental expertise. After execution, and in case the results of the Public environmental expertise are approved by the organs of the State environmental expertise, the decisions made by the public environmental expertise acquire the authority of a State decision and are legally binding.

The public (non-state) expertise can be initiated by citizens, public associations, and municipal communities. The initiators wishing to proceed with the public environmental expertise of a project have to be State-registered, must follow a legally prescribed form of the expertise, and must inform the public about the initiation and the results of the public expertise.

State environmental expertise
The State environmental expertise is financed by the investor in the project. The investor should provide the organs of the State environmental expertise with all the documentation necessary for adequate analysis of the project and its impact on the environment. The organs of the State environmental expertise are empowered to send orders to commercial banks to halt all financial operations linked to a project that does not receive positive approval of the State environmental expertise.

The organs of the State environmental expertise are obliged to inform the Government Attorney's Office and other State authorities of all infringements to the State environmental

expertise for measures to be taken to stop all projects that are not approved by the State environmental expertise.

1.3 Inspection Authorities

Inspections ("Environmental Control") are authorised by the law "On Environmental Protection" in the following forms:

- state service for monitoring environmental conditions,
- state inspections,
- (on site) production inspections; and
- public inspections.

The main authorities for carrying out environmental inspections are as follows:

- Authorities of general competence, such as the Government of Georgia and local administrations;
- Specially empowered State agencies, including:
  - ◊ State Department for Sanitary and Epidemiological Control;
  - ◊ State Department for Land Resources Protection and Waste Management;
  - ◊ State Department of Subsoil Protection; and
  - ◊ State Committee for Construction.
- Ministry of Environmental Protection;
- State Department of Hydrometeorology and Environmental Monitoring;
- Department of Water Resources Protection;
- Department of Forests Protection;
- Department of Air Protection;
- Department of Biodiversity Protection;
- Department of Fish Resources Protection;
- Ministry of Internal Affairs.

The Ministry of Environmental Protection now coordinates all other state agencies with environmental inspection responsibilities.

On-site production inspections are executed by the industries themselves using their own or other certified laboratories. State environmental monitoring is organised by the Ministry of Environmental Protection, which mainly uses the Department of Hydrometeorology and Environmental Monitoring for actual monitoring.

Monitoring of land is executed by the Department of Land Resources Protection and Waste Management with the participation of the Ministry of Environmental Protection, the Ministry of Agriculture, and other governmental bodies. According to the law, land may only be used for the purposes for which it was assigned, regardless of the form of ownership. The authorised uses are identified in the documents confirming the right of property. Inspections are executed by the local organs of environmental control (state inspectors or a specially created commission) which, on the one hand are to send a preliminary notification to the actor to be inspected, and on the other hand can carry out unannounced inspections on the basis of information received from third-party sources.

The general responsibilities of the State environmental control officials include the following:

- to visit facilities and organisations regardless of the type of property, including military installations;
- to check the functioning of pollution control equipment, and to determine if they comply with the law;

- to issue permits for waste output, related to the disposal of solid and other waste;
- to determine the standards for waste and toxic pollution emissions in coordination with the organs of sanitary and epidemiological control;
- to determine the necessity for organising the State expertise and to control the implementation of the resolutions formulated by the expertise;
- to require the elimination of any uncovered defects in the planning and functioning of pollution control equipment;
- to arrest those guilty of infringement of environmental protection regulations and to institute administrative and criminal proceedings against persons and companies; and
- to make the decisions to limit, to suspend or to halt the functioning of any industrial activity causing damage to the environment.

These decisions are obligatory for all ministries, organisations, companies, officials and citizens. The state environment inspector is empowered to do the following.

- Issue a directive following a predetermined form in which he or she can prescribe several measures to be taken by the industrial agent to ensure their activities comply with the environmental law (such directives must have a warning that in cases where the industrial agent does not take adequate measures, the materials will be sent to the administrative commission for punishment to be applied.);
- to issue a Protocol (a record of proceedings) reflecting an infringement to the environmental law or other environmental norms and to send it directly to the administrative commission for punishment to be applied;
- render a decision (make an enactment) for punishment application on persons guilty of violating environmental regulations;
- issue a command for the industrial agent to halt all exploitation of a site until the infringements to the environmental regulations are corrected (such a command should have a warning to send notification to the bank to suspend all financial operations of the industrial agent in question.);
- can send to the bank servicing the industrial agent a command (using a special form) to stop the financial operations on the account of the industrial agent in question.

1.3.1 Environmental Fees

Environmental fees can be assessed for:

- the use of natural resources;
- the use of the natural resources beyond the authorised limits or for "irrational" use of natural resources; and
- emissions of environment pollution.

Land use fees are determined by the Code for Lands, 1984.

Fees are also prescribed by the "Code for Water", 1984, in the form of:

- water resource use fees;
- fees for reconstruction and protection of water resources which include payments for:
  - ◊ water abstraction within the allowed limits.
  - ◊ water abstraction in amounts exceeding the allowed limits.
  - ◊ wastewater discharges to bodies of water within the allowed limits.
  - ◊ wastewater discharges to bodies of water in quantities exceeding the allowed limits.
  - ◊ wastewater discharges containing pollutants in quantities exceeding the allowed limits.

A charge for issuing a licence for using a body of water is collected in the amount determined by the respective state environmental control administration; the cost of the licence is based on the expenses linked to the execution of the expertise for using this body of water.
The fee levels for using natural resources should be determined in accordance with the procedure for PDV/PDS identification for each industrial/commercial agent. The fees for using natural resources are calculated on the basis of individually determined standards. Initially the

fees were introduced by the Soviet Government Decree No. 32 of 1 January 1988.Based on this Decree the Ministry of Environmental Protection has developed and approved two basic forms of fees for using natural resources:

- fees for waste disposal and for other forms of harmful impacts on the environment within allowed standards (PDK). This fee is calculated by multiplying the rates (per measurement unit of pollutant) by the quantity of the pollutant. The results for each pollutant are tallied.
- fees for waste output and for other forms of harmful impact on environment within the allowed limits (PDV/PDS). This fee is calculated by multiplying the basic rates per pollutant by the difference between the standards and the limits per pollutant. The results for each pollutant are tallied. In cases where the facility exceeds the waste output limits, the fee calculation will be done by multiplying the rates foreseen for the limits by the amount of actual excess waste output. The results for each pollutant are tallied. The received sum is given the coefficient five which means it is multiplied by five. In cases where a facility does not have a properly formulated permit for waste output, all the mass of the wastes is considered to exceed the limits and is to be paid in accordance with the procedure for the limit rate waste output.

1.4 Health and Safety Administrations and Agencies

The State Sanitary and Epidemiological Service is the main controlling body regarding occupational health and safety issues. The official bodies and institutions of the State Sanitary and Epidemiological Service represent the unified system, headed by the State Committee of Sanitary and Epidemiological Control. The State Sanitary and Epidemiological Service consists of the following organisations:

- State Committee for Sanitary and Epidemiological Control of the Russian Federation;
- Centres for Sanitary and Epidemiological Control in the autonomous republics and regions, cities;
- Scientific Institutes for issues of sanitary and epidemiological control;
- Educational Institutes and Colleges responsible for training specialists in the field of sanitary and epidemiological control.

The State Committee for Sanitary and Epidemiological Control is the official body which issues the state sanitary norms and regulations.

Together with state technical inspection and representatives from trade unions, sanitary-epidemiological inspections are responsible for issuing permits for construction and operation of production buildings, constructions and equipment. It is required that any project design or construction works comply with requirements of the occupational health legislation which includes rational use of the territory and production premises, adequate operation of the equipment and organisation of production (technological) processes, protection of workers against harmful and dangerous production factors, compliance with sanitary and hygienic norms and regulations regarding working facilities and places, establishment of sanitary facilities. Legislation provides economic incentive for enterprises to comply with the occupational safety standards. The privileged taxes can be applied if enterprise introduce or develop new (safer) technologies or production facilities, produce protective equipment (collective or personal) and control devices. On the contrary, if enterprise does not comply with safety legislation, the fines or damage should be paid. An acceptance commission check in details the compliance of enterprise with occupational health and safety norms and regulations. All members of the acceptance commission (representatives of trade unions, technical inspections and sanitary-epidemic control) should sign inspection report and acceptance

certificate for new and redeveloped facilities. All working facilities should have safety certificate.

The Standardisation, Metrologic and Certification Committee (Gosstandard) is dealing with the certification of production equipment and protection means.
Administration of the enterprise must ensure that all working places are equipped with adequately safe facilities and protection equipment is provided. Administration must ensure that all new raw materials and semi-finished products used for production purposes have passed special examination regarding their effect on human health.

The occupational safety norms and regulations could be intersectoral, sectoral and local for enterprise. The intersectoral norms and regulations state the health and safety rules common for several sectors of economy. They are developed by the Ministry of Labour. The sectoral norms and standards are established by appropriate ministries, departments and state control bodies. They are specific for particular type of production activity. In accordance with and on the basis of intersectoral and sectoral norms and standards ministries, departments and state control bodies can approve occupational safety instructions. An administration of enterprise, in cooperation with trade unions, can develop local safety rules, based on such instructions.

The occupational health and safety standards in Georgia consist of the following:

- the system of occupational safety standards (SSBT). The state standards (GOSTs) are approved by the Gosstandard and the State Architectural Committee; the sectoral standards are approved by an appropriate central federal executive bodies; the enterprise standards are approved by enterprises;
- the sanitary norms, standards and hygienic regulations which are approved by the State Sanitary and Epidemiologic Control Committee and the Ministry of Health;
- the safety rules (fire safety, radioactive safety, biological safety, technical safety, etc.).

The Mintrud coordinate the development of safety rules.

An enterprises must assign annually some funds for the occupational safety measure in accordance with collective agreements. These funds must be spend exclusively on improvement of employees health and working conditions.

2 ENVIRONMENTAL REQUIREMENTS

2.1 Environmental Management Programme

Georgian legislation does not require companies to develop any special form of environmental management system, nor that any special personnel be hired for managing the environmental protection and pollution control equipment at enterprises. However, compliance with all applicable standards, limits, and quotas prescribed by the environmental authorities is considered extremely important. It is common practice among larger companies to hire specialised environmental personnel, to equip their own laboratories for all required environmental testing and analyses, and to carry out their own laboratory certification.

Moreover, companies are required to maintain an environmental register for all aspects of inspections, maintenance and operations of their environmental protection and pollution control installations and equipment. In addition, annual reports must be prepared and presented on industrial waste, secondary waste generated by pollution control equipment, use of chemicals, actual emissions, and waste generation and disposal.

2.1.1 Regulatory obligations

The main principals of Georgian environmental policy and legislation are stated in the Constitution. It stipulates that "the citizens have the right to live in a favourable environment, to have access to authentic sources of information on its actual condition and to be compensated in cases of detriment caused to health and to wealth by environmental infringement."

The framework of environmental policy and regulations of Georgia is established in the following legislative documents:

- Law on Environmental Protection, adopted in 1996;
- Land Code, 1984;
- Water Code, 1984;
- Law on Air protection, 1981;
- Regulations of the Sanitary and Epidemiological Service of the Georgian Health Ministry;
- Law on State Environmental Expertise, 1996;
- Law on Environmental Permits, 1996;
- Law on the Wild Fauna Protection, 1996;
- Law on Protected Areas System, 1996;
- Law on Transition and Import of Waste to the Territory of the Republic of Georgia, 1995;
- Law on Soil Protection,1995;
- Law on Basic Taxation, 1994.

The following drafts have been prepared or are under preparation by the Parliamentary Commission on Natural Resources and Environmental Protection and by Ministry of Environment:

- Law on Waste Management;
- Law on Hazardous Substances;
- Water Law.

Within the above framework, State Committee of Standardisation (Gosstandard) issues state standards for air and water quality, noise and vibration, effluent quality and many others. The Ministry of Environmental Protection develops guidance and procedures for application and utilisation of standards in particular areas of environmental protection.

2.1.2 Planning/Implementation of Environmental Programmes

In accordance to the Law on *State Ecological Examination*, adopted in 1996, enterprises are required to develop an environmental management plan at the very early stage of planning activity. The Environmental management plan and mitigation measures against negative environmental impacts must be included in the planning application submitted to the local branch of Goscomecology for approval of the proposed activity.

All normative documentation should state the relations between state authorities and developer, specify the responsibilities and liabilities of both parties and determine the intended environmental protection measures as well as economical and social impact on the region. The environmental part of the documentation should include an environmental assessment of the proposed area and the following normative documentation:

- type and amount of natural resources to be utilised;
- type and amount of pollutants to be generated, including wastes;
- physical impacts;
- noise, radiation, heat and other impacts.

The technical part of the documentation should include:

- information on technical and technological processes;
- information regarding materials used for production and characteristics of the final product, which include:
  - ◊ physical and chemical characteristics of the materials;
  - ◊ characteristics of bioresistivity (biodegradability) of materials in natural environment;
  - ◊ list of environmental impacts;
  - ◊ assessment of the impact on the abiotic components of the environment (changes of chemical characteristics of air, physical-chemical characteristics of soils;
  - ◊ sanitary and hygienic assessment of the materials;
  - ◊ information on materials utilisation, storage, transportation and disposal of;
  - ◊ measurements to provide environmental safety for utilisation, storage and transportation of the materials;
  - ◊ reuse, recycling and disposal methods for materials;
  - ◊ specific measures to provide safe disposal of the materials.

The Law on *State Ecological Examination* states that prior to any economic activity or development being undertaken it is necessary to accomplish the assessment of potential impacts of the proposed activity on the environment. It lists more than 30 activities for which a full EIA is obligatory. Among them are production of asbestos containing materials, chemical industry, paper production, highways and railways construction, construction of airports, wastewater treatment plants, large water intakes, etc. It is also required that the following information is included in planning documentation: purpose of the development or proposed activity; alternatives; state of environment in proposed area; potential negative impacts; mitigation measures; monitoring and environmental management plan.

2.1.3 Environmental Personnel

Georgian legislation does not require companies to develop any special form of environmental management system, nor that any special personnel be hired for managing the environmental protection and pollution control equipment at enterprises. There are no specific requirements to appoint a site compliance officer. However, compliance with all applicable standards, limits, and quotas prescribed by the environmental authorities is considered extremely important. It is common practice among larger companies to hire specialised environmental personnel, to equip their own laboratories for all required environmental testing and analyses, and to carry out their own laboratory certification. The Law on Environmental Protection, 1996, states that enterprises, institutions, organisations and citizens must maintain the established

environmental quality standards by keeping to the approved technologies, by implementing ecologically safe technologies and production processes, reliable and effective operation of treatment works, facilities and means of control, treatment and utilisation of wastes, by accomplishing environmental activities and programmes to ensure the protection of lands, sub-soils, waters, forests and vegetation, animals, and reproduction of natural resources.

2.1.4 Environmental Record Keeping

Companies are required to maintain an environmental register for all aspects of inspections, maintenance and operations of their environmental protection and pollution control installations and equipment. In addition, annual reports must be prepared and presented on industrial waste, secondary waste generated by pollution control equipment, use of chemicals, actual emissions, and waste generation and disposal.

Other requirements regarding environmental records of air emissions, wastewater discharges, water use and waste disposal are presented in the relevant sections of this report.

2.2 Air Quality

2.2.1 Air Quality Regulations and Requirements

The Law on Air Protection, 1982, contains general provisions for air protection and regulation of impacts on air quality in the process of economic and social development. It defines the general obligations to protect air against pollution by industries, transport, energy production and other sources, establishes a system of environmental standards and permits and contains measures to control acid rain, trans-frontier pollution, climate change and depletion of the ozone layer.

Air quality standards are introduced by federal health protection and environmental protection agencies. Air quality standards are established for each type of air pollutant and physical effects (radioactive, electromagnetic, sound, etc.) separately measured in milligrams per cubic metre of air, both for total maximum concentration and daily average concentrations. These standards are established separately for work place and stack emissions.

2.2.2 Inventory of Air Emission Sources

The Law defines two sources of pollution: mobile and stationary. Standards for maximum permissible levels of emissions are established for each individual type of stationary source and each mode of transport.

Maximum allowable concentrations (MAC) have been developed for 479 air pollutants. MACs play the role of a limiting factor while at the same time serving as a basis for the calculation of maximum allowable emissions. These are determined by considering the background level of pollution and the existing level of industrial impact on the environment in a given territory.
There are three main levels in determining the harmful impact of a pollutant:

- maximum instant impact and the corresponding concentration.
- maximum daily impact and the corresponding concentration.
- In absence of the previous two basic parameters (certain pollutants do not have any officially prescribed parameters) there exists an "provisional level of safe concentration." Where certain official parameters of Maximum allowable concentration do not exist, the concerned company must calculate it on its own and present the data for approval to the Sanitary and Epidemiological Control administrations, which consider it in coordination with the State Committee for Environmental Protection. These two authorities then take a mutually agreed decision.

This is a rather long process, the cost of which is borne by company concerned. Thus, it is strongly recommended that the company begin the process as early as possible, particularly if the emissions are expected to contain any rare particular pollutant.

The ventilation, heating, and air conditioning in new buildings are to be designed and installed in accordance with the Construction Norms and Rules No.2.04.05.-86 approved by Decision No. 49 of 15 December 1986 of the USSR State Committee for Construction (still in force).

2.2.3 Air Emission/Stack Plan

An emission standard is a limitation per unit of time on the maximum quantity of a pollutant that may be released into the air by a particular source. Emission standards are determined by the owner of the air emission source or its administrative entity according to the procedures described in *Limitations of Maximum Permissible Emissions and Physical Effects, 1981.* Emission standards should then be approved by the environmental or sanitary control agencies within their competence.

Maximum allowable concentrations and air emissions are to be calculated and agreed for:

- the workplace; and
- stack emissions.

Stack height plays an important role, as does the wind rose at the location of the facility, along with background air contamination of the region.

2.2.4 Air Emission Characteristics and Monitoring Plan

Emissions from the facility are to comply with the maximum allowed concentrations (MAC), as noted in the table below, although it should be noted that emission limits in Georgia can be as much as one order of magnitude more restrictive than most other countries. As a result, in certain cases, the MAC may not even be measurable with current technologies and are practically never enforced. In most cases, it is necessary to work with the authorities to ensure permit conditions are reasonable for the level and type of pollutant emission anticipated.

Table 2.1: Maximum Allowed Concentrations (MAC) of Selected Pollutants in Facility Emissions (mg/m^3)

Pollutant	Class of Danger	MAC (punctual)	MAC (daily) (24 hours)	Approx. Level of Safe Concentration
Dioxide of Nitrogen	2	0,085	0,04	
Oxide of Nitrogen	3	0,4	0,6	
Nitrogen three-fluoride	3	0,4	0,2	
Acrilonitrile	2		0,03	
Caprolactam	3	0,6	0,6	
Sulphur Dioxide	3	0,5	0,05	
Aniline	2	0,05	0,03	
Acetone	4	0,35	0,35	
Barium carbonate			0,004	
Barium oxide	1			0,004
Vanadium 5-oxide	1		0,002	
Particulates	3	0,5	0,15	
Vinyl acetate	3	0,15	0,15	
Bismuth oxide	3		0,05	
Hydrogen cyanide	2		0,01	
Gexan	4	60,0		

Asbestos containing dust	1		0,06	
Vinylplast dust				0,01
Natural zeolite dust				0,02
Paper dust				0,1
Wooden dust				0,1
Brass dust (by Cu)				0,003
Paraffin dust				0,6
Cement dust	3	0,3	0,3	
Dolomite dust	3	0,5	0,15	
Polypropylene dust				0,1
Phenolformaldehyde resin dust				0,05
Mercury metallic and its oxides	1		0,0003	

In addition to air emission regulations, Georgia has developed some requirements regarding air quality in buildings and at the working places. These requirement are specified in GOST 12.1.005-76 *Temperature, Moisture and Content of Pollutants in the Air of Working Zones.*

2.2.5 Emissions Reductions

The Law on Air Protection states that all enterprises should implement measures to reduce their emission. Measures to protect air must not cause the pollution of soils, surface and underground waters and the general environment. According to the Law on Air Protection enterprises are required to reduce their air emission in cases of unfavourable meteorological conditions. An air emission should be limited, stopped or prohibited if it exceeds permissible level or threatens the public health.

2.2.6 Record keeping

According to the Law on Air Protection, 1982, enterprises are required to keep records of their emissions including type, composition and amount of pollutant.

2.3 Emergency Preparedness and Response

There is no information available about Emergency Preparedness and Response for Georgia. For Russian Federation the regulations are following.

Chapter VIII of the Law on Environmental Protection concentrates on the handling of extraordinary environmental incidents and disasters, particularly in Articles 58 and 59 (see Annex 1). The Law applies primarily to large-scale environmental disasters on a regional and national levels (for emergency classification see below), and introduces the notion of a "zone of extraordinary environmental situation" which can be declared by the President of Russia in the form of a Decree which is requested and prepared by the local environmental protection authorities. All activities having a negative impact on the environment can be suspended in such zones until the required remedial measures are taken. The law also specifies that the financing of such an environmental measure is to be provided by the responsible parties (companies, ministries) as well as funds for specific Federal environmental programmes.

Law of the Russian Federation On Protection of Population and Territory from Emergency Situations of Environmental and Technological Nature, December 21, 1994, №68-F3, which was signed by the President on 21 December 1994, also addresses the responsibility of industrial entities for environmental disasters. According to the law, companies must promptly inform the environmental protection authorities of the current (normal) and of any potential extraordinary environmental situations that could arise at their facilities. They must also make

provisions for the necessary financial and material resources required to deal with the consequences of a potential environmental disaster. The Federal government issued Decree No. 1113 "On unified state system of extraordinary situations prevention and the consequences elimination" on 5 November 1995, according to which industrial operators must be prepared to inform the Ministry of Civil Protection and Extraordinary Situations of any environmental disasters that occur at their facilities.

In accordance with the above mentioned Law was issued the classification of emergency situations, approved by the Government of the Russian Federation on 13 September 1996. It classifies emergency situations as on-site, local, territorial, regional, national and transeboundary. Emergency can be qualified as an "on-site emergency" if less then 10 people were injured or living conditions of less then 100 people were effected or if damage is less then 1000 "minimum wages" (special term introduced in Russia for social security) or if impacted area does not exceed the area of enterprise. On-site emergency situation should be eliminated by enterprise and at its own expenses.

The coordination of disaster prevention is to be done in compliance with Federal Government Decree No.164 "On interministerial Commission for extraordinary situation prevention and consequences elimination" of 20 February 1995. The Minister of Civil Protection and Extraordinary Situations is appointed as head of this Commission. Industrial operators must maintain direct contact with the Ministry in the event they conduct hazardous production processes. They must also maintain direct informative contact with the Ministry of Health's Department of Sanitary and Epidemiological Control, which is empowered to enforce compliance by any industrial activity with the requirements of the Federal law "On sanitary and epidemic well-being of the population" initially dated 19 April 1991 and incorporated into Federal law No. 89 of 19 June 1995, which came into force on 22 June 1995.

Official Letter No. 01-11/29-2618 of the former Ministry of Environmental Protection, registered in the Ministry of Justice on 11 September 1995, obliges industrial operators to maintain direct informative contact with the Goscomecology. The same requirements to inform the environmental protection authorities of any environmental incident or disaster immediately (on the same day of the incident) by telephone were reconfirmed by Order No. 29 of 23 June 1996 of the same Ministry.

In addition to the above-mentioned regulations, there are fire safety regulations and flood safety regulations.

According to the *Fire Safety Regulations* PPB-01-93 for the Russian Federation, in force from 1 January 1994, every enterprise must comply with the requirements set in the standards, construction norms and regulations, norms for technological design, regional norms and requirements for specific industries; develop an evacuation plan and provide necessary equipment for emergency situations; undertake regular fire preventive measures and train staff. Enterprises are required to undertake periodical fire-alarm training (according to the requirements of the local Fire Safety Service).

Flood safety is regulated by Order No 353 of 26 March 1998 on *Flood Safety on the Territory of the Russian Federation in 1998.* This document states requirements and preventive measures for floods in 1998.

2.4 Hazardous Materials

2.4.1 Inventory of Hazardous Materials

Requirements for Georgia have to be obtained. For Russian Federation regulations are following.

According to the Decree of the Government No869 of 12 November 1992 on State Registration of Potentially Dangerous Chemicals and Biological Substances all potentially dangerous chemical and biological substances should be registered with the Russian Register in order to prevent their adverse effect on the environment and public health. All individual chemical and biological substances (compounds), manufactured and/or applied on the territory of the Russian Federation should be pertained to state registration. Substances, designed for production or use after 31 March, 1993, so called "new substances" should be registered before their production or use will start. Substances, produced or imported to the Russian Federation before 31 March, 1993, "old substances", should be registered within three years from the publication of the document (25 May 1993). There is a certain fee for State Registration and all applications should be submitted to: 18-20 Vadkovskii per., Moscow 101479, Russian Federation. Documentation should include the following:

- the cover letter, signed by paying party (enterprise);
- the fulfilled "list of information, required for state registration of potentially dangerous chemical and biological substances";
- the list of references, on basis of which "list of information" have been completed;
- payment order;
- expert conclusions about possibilities to publish in mass media the materials of state registration.

2.4.2 Hazardous Materials Storage Area Design

These requirements were developed during Soviet Union so they are likely to be still applicable in Georgia.

The open storage area for hazardous materials should be enclosed by a fence of not less than 2 meters high and embanked. The size of the embankment is regulated by the construction norms related to the specific production and type of the hazardous materials. Within the embankment, the storage area must be carefully designed and covered with gravel. The storage area should be elevated above ground for 0.2 m and surrounded by a ditch to collect storm water run off.

The storehouse for inflammable materials must not have more than one floor. Windows in storehouses for gaseous materials should be painted or covered with protection against sun and heat. The storehouse must be naturally ventilated.

Liquid hazardous materials such as oil and diesel can be stored underground in specially designed containers covered by 2 m of earth.

2.4.3 Transfer and Handling of Hazardous Materials

According to the Fire Safety Regulations, the following requirements are applicable to the transportation of hazardous and flammable materials:

- all containers must be marked according to the toxicity of transported materials and accompanied with documentation specifying the type of transported materials, amount and final destination;
- hazardous materials should be packed in containers or other packaging material in accordance with the requirements of state standards and type of material. Packaging material and containers must be firm, in good order, prevent spillage and provide safe transportation of the materials;
- flammable materials must be supplied with fire-extinguishing equipment, placed in a hermetically sealed packaging or containers;
- glass containers should be placed in a firm wooden or plastic boxes with fire-resistant and absorbent filling;
- metal and plastic containers should be placed in wooden boxes;

- solid, dry substances should be transported in small lots, solid substances which are packed in sacks must be additionally packed in a hard cover (metal or plywood drums);
- loading-unloading areas should be equipped with special facilities (stretchers, ladders, etc.) to provide a safe working environment. Hand-cart or special stretchers with sockets must be provided for glass containers, or otherwise they can be carried by two people in a basket with handles. Workers should be provided with personal safety clothing. Loading and unloading should be carried out in accordance with warning signs and instructions;
- filling and draining of containers must be carried out through pipes and hoses.

2.5 Environmental Due Diligence

Prior to undertaking any economic activity or redevelopment, it is necessary to submit specific documentation to the state environmental expertise (see section 2.1.2 above). This documentation should contain a feasibility study for the proposed activity or redevelopment and an environmental impact assessment.

2.5.1 Soil and Groundwater Contamination

Protection of the land in Georgia is based on the "Code of Land", adopted in 1984. Groundwater is regulated by the "Water Code", adopted in 1984. Soil contamination levels are calculated on the basis of the "List of maximum allowable concentration of basic toxic matter in the soil.", Sanitary standards and Regulation No. 6229-91, Ministry of Health of the USSR, 1991. The following is selection of pertinent standards:

Table 2.1: Soil and Groundwater Maximum Allowable Contamination Levels

No.	Pollutant	Maximum allowable concentrations (µg/kg)
1	Acetaldehyd	10.0
2	Bensapiren	0.02
3	Benzene	0.1
4	Benzol	0.3
5	Vanadium	150.0
6	Isopropylbensol	0.5
7	Arsenic	2.0
8	Nitrates	130.0
9	DDT (sum)	0.1
10	Mercury	2.1
11	Pb + Me	20.0
12	S (elementary)	160.0
13	H_2SO_4	160.0
14	Furfurol	3.0
15	Cobalt (mobile)	5.0
16	Cu (mobile)	3.0
17	Ni (mobile)	4.0
18	Pb (mobile)	6.0
19	Zn (mobile)	23.0
20	Cr (mobile)	6.0

The *Law on Environmental Protection*, 1996, states the main principles of environmental liability. Enterprises, organisations and individuals are liable to pay the injured party for all damage to the environment and/or to health and for any loss of property in accordance with

existing legislation. Compensation for the damage could be made voluntarily or following a court order. The amount of compensation should be calculated in accordance with guidance and methods developed by responsible bodies or, in the absence of specific methods, should be equal to the real cost of environmental clean-up including damage to property and benefit losses. Compensation can be paid directly to the aggrieved party or to the state environmental funds if the damaged object is common property. If several persons inflict the loss the charge should be calculated according to individual contributions, this includes research and design institutions and construction companies.

The GOST 17.4.2.01-81 *"Soils. Indicators of sanitary state"* provides a matrix of various types of contamination and the zones or locations in which they would require investigation.

The enforcement of environmental regulations and requirements lies with the local administrative authorities and local state environmental committees and bodies. The existing legislation does not particularly specify particular environmental liability for the cases when environmental damage have been caused by previous owner of the site.

2.6 Hazardous Waste

2.6.1 Hazardous \Waste Regulations and Requirements

The Law on *Environmental Protection*, 1996, establishes a number of stringent requirements concerning safe handling of industrial wastes and methods of their collection, disposal and utilisation. For example, it is prohibited to dispose of toxic wastes on sites in the vicinity of cities or other settlements or natural recreational or specially protected areas. It is envisaged that environmental protection and sanitary control agencies are double checking the dangerous waste management practices.

There is no available information on waste management in Georgia. Here are the requirements for the Russian Federation.

The Federal Act on *Industrial and Domestic Wastes* establishes the legal responsibilities for all enterprises and persons who generate or handle domestic and industrial wastes. The Federal Act sets out requirements regarding the handling and transportation of hazardous wastes. All hazardous wastes must be properly classified on the basis of their composition and characteristics, registered and labelled on site and then handed to the specially trained operator who possesses the state license.

2.6.2 Inventory of Hazardous Wastes

The Order of Goskomecology on *Federal Waste Specification* provides classification system for all types of wastes. The catalogue has five classification levels: blocks, groups, subgroups, positions and subpositions. The highest level of classification is blocks, formed according to the origin of waste: organic (animal and green waste), mineral waste, chemical waste and domestic (including household) waste.

All hazardous wastes are classified into four categories according to the degree of toxicity: (I) extremely hazardous; (II) highly hazardous; (III) moderately hazardous and (IV) least hazardous.

The enterprise should present to local branch of the Goscomecology application form for recording their wastes in the Waste Catalogue and information about every particular type of waste in two copies:

- origin of waste;
- aggregative state;
- chemistry of waste (percentage of all compounds) and methods of determination;
- toxicity of waste.

It is required to update those records once in three years.

The Instruction for the Determination of the Toxicity Index for Industrial Wastes, published by the Ministry of Health in 1987, provides methods to determine the toxicity index according to the maximum permissible level of pollutants in industrial wastes.

2.6.3 Landfill Sites

Under Order No 3133/84 on *Handling, transportation, treatment and burying of industrial toxic waste*, approved by Head Sanitary Epidemiological Doctor of former USSR and Regulation No 2.01.28/85 on *Construction norms and regulations,* approved by Gosstroj, waste disposal facilities are classified as following:

- facilities for household and construction waste;
- facilities for the treatment and landfilling of industrial waste;
- radioactive waste facilities.

According to Regulation No 2.01.28/85, waste disposal facilities are intended to centralise the collection, treatment and disposal of toxic waste from enterprises and companies. Chapter 4 of the Regulation covers sanitary instructions for the disposal facilities:

- Disposal facilities must be situated in the areas that are remote from residential areas
- The sanitary zone must be 3000 meters;
- The site must be bordered by a ring canal, etc.;
- The facility will be comprised of: a plant for treating the toxic waste, a landfill, a garage for waste transport equipment.

Only toxic waste of the first, second and third categories according to degree of toxicity would be accepted for disposal at such facilities. Radioactive waste and oil products are not acceptable for disposal in these facilities. The waste falling in the fourth category must be brought to household waste dumps.

2.6.4 Hazardous Waste Storage Practices

All industrial wastes produced by an enterprise should be packed according to their toxicity index: steel containers for first category; polyethylene bags for the second category and paper bags for the third category of waste. After packing, the wastes should be weighed, recorded and delivered to the storage sites for further transportation to the landfill sites. Fourth category wastes are piled up at storage sites.

2.6.5 Transportation and Disposal of Hazardous Waste

Hazardous wastes:

- should be transported in specially equipped and properly marked vehicles;
- should have a hazardous waste passport stating the composition and properties of the waste. The passports should be signed by an authorised person from the enterprise and should always be available for inspection when wastes are transported;
- should be accompanied by documents stating the amount of hazardous waste, reason and final destination of transportation.

Industrial waste, depending on toxicity and other properties, are disposed of either at the ordinary dumps or toxic waste landfill sites. The method of disposal is chosen depending on

the aggregate state, solubility coefficient, toxicity index and other special characteristics of the substance.

Ordinary landfill sites receive category II-IV wastes. The total volume permitted varies for each region depending on its natural capacity to assimilate and neutralise pollutants without causing harmful effects to the environment and public health. In order to reduce adverse effects on the environment the limits for waste generation and waste disposal are set by the Government of Georgia in Provisional Regulations on Payment of Taxes for Polluting the Environment with Harmful Substances, adopted by the Resolution of the Cabinet of Ministers No 1010 of 22October 1992, with amendments No379 of 13 May 1993 and No 402 of 24 June 1994.

2.6.6 Record Keeping

All enterprises or legal persons producing or handling wastes should keep records of wastes generated, reused, treated, transferred to or received from different organisations, and disposed of. All records should be kept for a certain period of time (to be set by the local authorities) and be available to present upon request of the competent authorities. All waste shipments must be accompanied by a "passport" containing information outlined in section 3.6.5 above.

2.7 Aboveground Storage Tanks

Specific requirements for above-ground storage tanks (ASTs) include the following:

- the storage area should be surrounded by fence at least 2 m high, embanked, elevated to at least 0.2 m above ground level and surrounded by ditch for storm water run off;
- it is strictly forbidden to use unsealed containers and locks, containers with warps and cracks, faulty equipment, control instruments, input pipes and stationary fire safety equipment; to have trees and bushes within the storage area; to place tanks on a flammable base; overload tanks; to pour products in or out during storms;
- spillage has to be cleaned immediately;
- on one embanked area there must not be more than four tanks within an area of 25x15m; distance between tanks must be not less than 10 m and distance to the embankment not less than 5 m. The distance to the next embanked storage area must be not less than 20m.

2.8 Waste Water

2.8.1 Wastewater Regulations and Requirements

The Water Code states that the discharge of waste waters (industrial, municipal, drainage and other) may be conducted only when:

- a permit is issued by the Agency for Use and Protection of Water Resources upon approval from environmental protection, sanitary and other related agencies;
- the discharges do not increase pollutant concentrations in water above the environmental quality standards.

When waste waters are discharged into water bodies classified for domestic and municipal use, the water quality standards must be observed at a distance of one kilometre upstream of the nearest point of water use. When waste waters are discharged into fishery water bodies, the standards must be respected at distance not more than 500m from the discharge point or the source of pollution.

Discharge limit values for pollutants are established individually for each enterprise or other source of pollution for the purpose of regulating the disposal of effluents into surface water bodies, ground water and onto land.

The Government of Georgia approved Provisional Regulations on Payment of Taxes for Polluting the Environment with Harmful Substances, adopted by the Resolution of the Cabinet of Ministers No 1010 of 22October 1992, with amendments No379 of 13 May 1993 and No 402 of 24 June 1994.

The Provisional Regulations prescribe the maximum permissible concentrations of pollutants for effluents discharged into water bodies, both on a permanent and temporary basis, with methods for establishing scientifically-based standards for effluents. Such standards are the basis for granting discharge permits. All water-using enterprises must have discharge permits related to maximum permissible discharges (MPD), maximum permissible concentrations (MPC), or for temporarily agreed discharges (TAD).

Discharge Limitations

The quality of waste water discharges to surface water (after pre-treatment) is determined by the "Regulations on Water Protection: Standard Rules" adopted by Official Letter No. 5/15-12 of 26 January 1991 by State Committee for Environmental Protection of USSR, and which came into force from 1 March 1991. The main requirements for the quality wastewater discharged to surface water are as follows:

Table 2.3: Requirements for wastewater quality

<table>
<tr><td rowspan="2">Pollutant or Parameter</td><td rowspan="2">Drinking Water Sources</td><td rowspan="2">Water for General Household Use</td><td colspan="2">Fish aquatoria</td></tr>
<tr><td>"extra" and "first class" fish</td><td>"second class" fish</td></tr>
<tr><td>Suspended Solids</td><td>0,25 mg/l</td><td>0,75 mg/l</td><td>0,25 mg/l</td><td>0,75 mg/l</td></tr>
<tr><td>Floating matter</td><td colspan="4">no floating matter should be visible on the surface of water</td></tr>
<tr><td>Colour</td><td colspan="4">no colour should be visible in a test-glass containing:</td></tr>
<tr><td></td><td>20 cm</td><td>10 cm</td><td colspan="2">no colour at all</td></tr>
<tr><td>Odour</td><td>max 1 ball directly or after chlorination</td><td>max 1 ball directly</td><td colspan="2">no odour should be given to the meat or to the fish</td></tr>
<tr><td>Temperature (°C)</td><td colspan="2">max + 3° C above the average of the hottest month of the year</td><td colspan="2">max + 5° C above the seasonal average</td></tr>
<tr><td>pH</td><td colspan="4">should not exceed 6,5-8,5</td></tr>
<tr><td>Dissolved Oxygen</td><td colspan="2">min 4 mg/l</td><td>6 mg/l in all seasons</td><td>4-6 mg/l by season</td></tr>
<tr><td>BOD compl.</td><td>3 mg/l</td><td>6 mg/l</td><td>3 mg/l</td><td>3 mg/l</td></tr>
<tr><td>COD</td><td>15 mg/l</td><td>30 mg/l</td><td colspan="2">depends</td></tr>
<tr><td>Chemical agents</td><td colspan="4">within the maximum allowable concentrations (MAC)</td></tr>
<tr><td>Lactosa positive bacilla</td><td>max 10.000 per litre</td><td>max 5.000 per litre</td><td colspan="2" rowspan="2">not regulated</td></tr>
<tr><td>Colifagues</td><td>100 per l</td><td>100 per l</td></tr>
</table>

The standards for waste water to be accepted by the municipal wastewater treatment facilities can depend on the regions where the waste is produced, but normally must meet the following standards:

Table 2.4: Standards for Wastewater Discharged to Sewerage Systems

No.	Pollutants	Allowable Concentration Limits (mg/l)	Sample Regional Allowable Concentrations (mg/l)
1	Suspended Solids	200	400
2	BOD complete	1000	1000
3	Fatty matter	60	50
4	Nitrogen (ammonia)	18	18
5	Chloride	1000	1000
6	Sulfate	500	500
7	Oil products	0,3	0,3
8	Anionic surfactants	1.0	1.0
9	Fe	0,5	0,5
10	Phosphorus of phosphate	2,7	2,7
11	Phenols	0,04	0,0-0,05
12	Cu	0,04	0,04
13	Ni	0,03	0,04
14	Zn	0,03	0,04
15	Cr -3	0,6	0,8
16	Cr -6	0,2	0,2
17	Pb	0,5	0,5
18	Al	0,2	0,0
19	Manganese	0,03	0,0
20	Formaldehyde	0,9	0,0-1,2
21	Fluoride	1,4	0,0-1,1

Quality limits for stormwater discharges (direct output) are as follows:

Table 2.5: Stormwater Discharge Limitations

No.	Pollutant	Allowable Concentration Limits (mg/l)	Sample Regional Allowable Concentrations (mg/l)
1	Suspended Solids	3-22	7,5-110
2	BOD complete	3,0	3,0-20
	COD	30	30-80
3	Mercury	0,0001	0,0
4	Nitrogen (ammonia)	0,4	0,0-0,5
5	Chloride	300	300
6	Sulphate	100	100
7	Oil products	0,05	0,05-0,5
8	Anionic Surfactants	0,5	0,0-0,05
9	Fe	0,1	0,1
10	Phosphorus of phosphate	0,2	0,0-0,2
11	Phenols	0,01	0,0
12	Cu	0,001	0,002
13	Ni	0,01	0,0
14	Zn	0,01	0,02
15	Cr -3	0,07	0,0
16	Cr -6	0,02	0,0
17	Pb	0,1	0,35
18	Al	0,04	0,3
19	Manganese	0,01	0,01
20	Cadmium	0,005	0,002
21	Cobalt	0,2	0,0

The regional Committees for environmental protection are empowered to determine the quality of the water to be accepted into local systems or for further cleaning or for direct discharge to surface water. For example, in Saint Petersburg the system accepts water with the following characteristics:

- pH within 6,5 to 9,0;
- Max temperature = 40°C;
- Max correlation COD: BOD complete = 1,5 or Max correlation COD: BOD-5 = 2,5* - * except for the basins with a separate system of collection of waste water.

Table 2.6: Maximum Allowable Concentration Limits for Selected Substances in Surface Water

No.	Pollutant	Maximum allowable concentrations for surface water used for fish reproduction (MAC) (mg/l)
1	Acrilamid	0,35
2	Acrylic acid	0,0025
3	Alumina bichromate	0,05
4	Ammonia salts	2,9
5	Ammonia bichromate	0,05
6	Ammonia	0,05
7	Aniline	0,0001
8	Acetone	0,05
9	Vanadium	0,001
10	Volframate	0,0011
11	Gexan	0,5
12	Titanium dioxide	1,0
13	Fe +2	0,005
14	Fe	0,05
15	Isopropyl alcohol	0,01
16	Cadmium	0,005
17	Cobalt	0,005
18	Paint components	0,1
19	Manganese ions	0,01
20	Cuprum ions	0,001
21	Cuprum	0,005
22	Carbamide	37,3
23	Arsenic	0,001-0,005
24	oils	0,05
25	Nickel	0,01
26	Mercury	0,0001
27	Pb 2+	0,1
28	Pb x	0,01
29	Sulphur	10,0
30	Sulphate ion	3,5 gr/l
31	Formalin	0,1 mg/l
32	Furan	0,01
33	Phosphorus elementary	absent
34	Zinc	0,05
35	Zn 2+	0,01
36	Cyanide	0,05
36	Chloride	300,0

Discharge Fees

Discharge fees are set depending on the permit type. There are two basic fees:

- fees for the discharge of contaminants within the norms of MPD
- fees for the discharge of contaminants exceeding the MPD

The fees depend also on the environmental sensitivity of the region.
When effluents are discharged into municipal water treatment facilities, effluent limits are determined by agreement between the owner of a source of pollution and that of the treatment facility.

2.8.2 Inventory of Sources Generating Wastewater

According to the *Water Code* of Georgia, any enterprise can be defined as source of pollution if it discharges wastewater or other pollutants to the surface or ground waters, decreases quality of water resources and has a negative effect on the condition of water body beds and banks.

2.8.3 Record Keeping

Enterprises must keep records of wastewater discharged to the communal sewerage systems and ensure that the quality of wastewater complies with the state requirements.

2.9 Water Supply

2.9.1 Water Supply Regulations and Requirements

The main principles of use and protection of water resources in Georgia are stated in the *Water Code*, 1984. According to the Water Code, every organisation, enterprise or otherwise must obtain a license in order to be able to use water resources.

Enterprises consuming water resources are required to:

- undertake protection measures to ensure stable water quality;
- register all volumes of water intake, wastewater discharge and the amount of pollutants present in the effluent,
- provide easy access to the information for state bodies regulating surface water and ground water resources.

Enterprises which use water for production and abstract water directly from wells or surface water sources should follow the requirements for drinking water quality stated in the State Standard GOST 2874-82 *Drinking Water - hygienic requirements and quality control.*

2.10 Asbestos Management

There is no information available on requirements regarding asbestos management.

2.11 PCB Management

There is no information available on requirements regarding PCB management.

2.12 Solid Waste

2.12.1 Solid Waste Regulations and Requirements

The Law on *Environmental Protection* of Russian Federation, 1996, defines some general provisions concerning wastes. Local authorities, enterprises, institutions, organisations and individuals have to take effective measures to deactivate, process, utilise, store or dispose of industrial and domestic waste and comply with the existing ecological, sanitary and epidemiological standards and regulations. The Law establishes a permit procedure for handling waste. Environment agencies at the local level have rights to issue permits for collection, transportation, treatment and disposal of industrial, domestic and other wastes. The Law prohibits putting into operation any new or modified economic and technical project not equipped with the necessary devices for waste minimisation and re-use.

2.12.2 Inventory for Solid Wastes

Solid wastes could be classified as an industrial, domestic and agricultural, toxic and non-toxic. Toxic wastes are specified according to the degree of toxicity.

The enterprise should present to local branch of the Goscomecology application form for recording their wastes in the Waste Catalogue and information about every particular type of waste in two copies:

- origin of waste;
- aggregative state;
- chemistry of waste (percentage of all compounds) and methods of determination;
- toxicity of waste.

It is required to update those records once in three years. It is also required to maintain records about amount of wastes generated by enterprise and waste disposal site which received them.

2.12.3 Solid Waste Storage Practices

Solid wastes, which have not been utilised or transferred to landfill sites for treatment and disposal, require recording. Temporary storage of solid wastes on a company's site should be agreed with regional environmental protection committee.

2.12.4 Solid Waste Disposal Practices

Non-hazardous solid waste may be disposed of in ordinary landfill sites. The method of disposal is chosen depending on the aggregate state, solubility coefficient, toxicity index and other special characteristics of the substance.

2.12.5 Solid Waste Reduction/Reuse Efforts

As prevention and minimisation of industrial wastes during the production process are considered to be the most efficient way of solving problems, the legislation therefore concentrates on preventive measures, including introduction of resource-saving, low-waste

and non-waste technologies. The preventive measures are established by respective legislative acts.

The *Law on Environmental Protection* prescribes that waste minimisation and other modern technologies to prevent pollution of the environment shall be considered and envisaged during preparation of project feasibility studies. This Law does not allow operation of economic and technical projects not equipped with modern technologies, structures and devices to ensure the disposal, treatment and utilisation of harmful wastes, emission and discharges, complying or not with the maximum.

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
Contaminated Material	Entire track Alignment Especially also: Areas near spillage incidents Stopping points Maintenance and sidings facilities Chemical/oil and waste storage areas Asbestos or PCB containing material/equipment	**Identifying Potential Contaminated Material** Identify locations likely to be contaminated and types of contaminants likely to be present , This should be undertaken before sites works are undertaken. If an audit has been carried out for the area -this should provide the relevant information **Handling Material** Ensure that all on-site contractors handling contaminated material: • receive appropriate health and safety training; • aware of potential hazards associated with the exposure to contaminated land; • maintain appropriate personal hygiene practices following handling (e.g. no eating, smoking or drinking on site; washing prior to leaving site); • employ appropriate Personal Protective Equipment (e.g. disposable nitrile gloves, safety boots and overalls); and • aware of first aid procedures. Ensure that guidelines in the relevant method statement(s) are observed and that required risk assessments have been duly completed in accordance with statutory requirements. Documentation from these assessments should be available on site at all times. **Disposal of material** Material identified as contaminated should be stored and disposed of in such a way that it does not cause pollution to soil, surface or groundwaters. It should be disposed of in accordance with the regulations	Construction/track works -Safety Manager EHS manager responsible for the area/ facility		Refer to guidance on dealing with contaminated material. Additional resources may need to be made available to investigate extent and type of contamination present.
Storage of materials/wastes	Entire Alignment for track works	Store chemicals oils and wastes materials such that they do not escape and cause contamination of surrounding			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
	All areas used for storage of chemicals, oils and wastes	soil, groundwater and surface water courses via leaching or airborne transfer. It is recommended that excavated materials should be stockpiled on impermeable surfaces and covered to prevent spread of potential contamination prior to re-use or removal from site. Any wastewater discharged from spoil storage areas should be controlled to prevent contamination of groundwater and nearby surface water courses Any water that has come into contact with contaminated material shall not be discharged to public or private surface-water or foul sewers nor to watercourses. It shall be disposed of as directed by the local Water Authority, if necessary using temporary lagoons on site. **Asbestos/Asbestos Waste** If significant quantities of asbestos and/or asbestos waste is encountered, work should stop immediately and an assessment made of the asbestos/asbestos containing material. Large pieces of rigid material should not be broken or cut. Asbestos and asbestos-containing material should be wrapped intact in plastic sheeting or placed in a sealed container or covered skip awaiting disposal by a licensed contractor.			
Oil Spillage prevention		**Derailment** (example headings only) **Fire hazards** **Unloading /loading** **Storage and handling of oils used in maintenance activities**			
Emergency response Plan		**Co-ordination with Authorities** **Internal Emergency Response Unit**			
Waste		**Waste Management Directive**			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
management		Waste management plan for each facility			
Energy Efficiency		Lighting Heating Resource use			
Procurement		Procurement policy to meet objectives relating to energy efficiency, waste management, safety etc			
Public Liaison		Communication links			
Liaison with authorities on operational activities		Communication links/meetings			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Responsible Authority	Legislation	Guidance/ Standards
			Section Manager / Resident Engineer Groundwater Protection Section Manager / Resident Engineer /		Waste Management Licensing Regulations 1994 (SI 1994 No. 1056) Environmental Protection Act 1990 (Sections 33 and 34) Environmental Protection (Duty of Care) Regulations 1991 Special Waste Regulations 1996 (SI 1996 No. 972) Special Waste (Amendment) Regulations 1996 (SI 1996 No. 2019) Special Waste (Amendment) Regulations 1997 (SI 1997 No. 251) Water Resources Act 1991 Classification, Packaging and Labelling of Dangerous Substances Regulations, 1984(a) Control of Asbestos at Work Regulations, 1987	Environmental Handbook for Building and Civil Engineering Projects: Construction Phase, CIRIA, Special Publication 98, 1994 Construction Practice Specification Part 1 GIBB Environmental - Phase II Environmental Assessment reports (Doc Ref. J96434B/63/B/30 003/P3 and J96434B/63/W/30 002/P3 DoE, Waste Management: The Duty of Care - A Code of Practice, 1991 Environment Agency Pollution Prevention Guidelines Control of Asbestos at Work - Approved Code of Practice, HSC (1988)

Table 1. Georgia Railways(SR): Example Framework for Environmental Management Plan

Subject: Institutional/Organisation Issues

EMP Issue	Action	Individual(s) Responsible for Action	Target Date	Budget/ Resource implications / Other comments
1. Setting up the EMP	Define job descriptions for and appoint staff to positions of: a) Corporate EHS manager b) Assistant EHS managers	DG/personnel		Salaries and overheads and support staff
	Draft and agree environmental policy	cEHS manager		as above
	Modify and expand draft framework management plan	a EHS managers		as above
	Develop reporting structure for EMP - which links EHS team into operational and administrative activities	cEHS manager and assistants		as above
	Undertake an environmental training needs assessment to identify key staff in terms of roles/influence and training needs	cEHS manager and assistants		as above
	Produce draft environment risk maps centrally with information available - these can form a basis for more detailed information generated by audits of specific areas/facilities.	EHS assistants		The Environmental Risk Maps should indicate the location of sensitive areas, receptors, rivers , aquifers protected areas, wetlands etc, the location of past spillages/incidents, locations of activities which could present a risk such as oil storage, handling facilities stopping places maintenance yards etc. This will need to be built up and added to over time as information is obtained from the audits . These maps will assist in determining priority areas for action and help plan responses to future incidents.
	Set up an audit programme covering all property and facilities and track	cEHS manager and assistants		An approximate budget can be assigned - likely to be most efficient to go to competitive tender, but require as part of Terms of Reference that railway staff are involved and trained as part of the audit process
	Set up database for legislation together with procedures for updating periodically - make this available to regions/facilities	cEHS manager and computer/IT department		Time to set up database and periodically to collect and input updates and make it available electronically or paper copy to all EHS managers Use legislative review in Volume II as a starting point
	Develop environmental objectives and targets which can be used to assess performance - refering to the corporate environmental policy, the audit results and analysis of compliance status	cEHS manager and assistants		These could include • obtaining 'ecological passports' for a specified number of facilities by a certain date • reducing the number of incidents each year • cleaning up specified areas of contaminated ground
	Compile environmental action plan and prioritise actions based on work needed to meet objectives and targets	DG/cEHS manager		Refer to Environmental risk plan, consultations with authorities, compliance analysis and business plan in drawing up priorities
	Develop corporate directives on key environmental management issues;	cEHS manager supported by		Many of these issues are closely related to reducing costs and improving efficiency of the railway operation as a whole. They

Table 1. Georgia Railways(SR): Example Framework for Environmental Management Plan

Subject: Institutional/Organisation Issues

EMP Issue	Action	Individual(s) Responsible for Action	Target Date	Budget/ Resource implications / Other comments
	oil spill prevention emergency response waste management energy efficiency	consultants		could provide significant savings in the long term. If consultants are commissioned to write these directives ensure that the EHS is closely involved and directs the output so that they address the particular management structure and operational activities of the railway.
2. Developing an EMS to implement the EMP on a day to day basis throughout the organisation	Develop simple operational procedures/guidance for staff undertaking or responsible for key tasks related to implementation of EMP. For instance these might be aimed at : • staff supervising loading and unloading activities • maintenance staff • construction staff	EHS assistants/ technical staff		All staff should be aware of their specific responsibilities with respect to environmental protection and should be reminded of these responsibilities through signs and brief guidance documents.
	Develop an overall programme for audit , review and modification of EMP and the environmental management system as a whole for the business plan period - 5 years	c EHS manager		
	Set up liaison meetings with authorities • on emergency response -preparedness and co-odination/communication • operational management issues relating to environment	c EHS manager		
	Develop a training programme for operational and administrative staff to implement EMS	c EHS manager supported by outside consultants		Train key staff to train others and training material to be customised to particular needs of staff

Restructuring of Georgian and Azerbaijan Railways

ENVIRONMENTAL MANAGEMENT PLAN GEORGIAN RAILWAYS

Volume II

Environmental Administrative Structures and Requirements

CONTENTS

1 ENVIRONMENTAL ADMINISTRATIVE STRUCTURES

Georgia is a democratic republic composed of 53 administrative regions and 2 autonomous republics: Autonomous Republic Abkhazia (Sokhumi) and Autonomous Republic Acharis (Bat'umi).

The foundation of Georgian Environmental legislation lies with the new Georgian Constitution, adopted on 17 October 1995, and the Land Code, 1984. The Constitution of Georgia stipulates "the right of citizens to life in favourable environment, to have access to reliable information on its actual condition and to be compensated for any damage caused to health and to wealth by environmental infringement". The Constitution establishes a general responsibility of every citizen to protect environment and natural resources. The Land Code establishes a right to information regarding state of environment, stipulating that the concealment of circumstances creating a threat to the life and to the health of people shall involve legal responsibility in accordance with the Georgian Legislation.

1.1 Environmental Administration and Agencies

Legislative and executive powers in Georgia are mainly centralised. The Parliament is the major body involved in passing laws. Drafts are elaborated and debated in several Parliamentary Commissions, prior to debate in a plenary session of the Parliament. Several administrative bodies take part in the elaboration process. Key actors in the field of environment are the Commission on Environmental Protection and Natural Resources of the Parliament and the Ministry of Environment of Georgia (full name is Ministry of Environment and Natural Resources Protection)

After the reorganisation of structure of Georgian Government in 1995, when the Cabinet of Ministers was cancelled and the position of State Minister was created, all Ministries are empowered to elaborate and implement the state policy for relevant sector. The President, as highest executive authority, controls and supervises the general direction of such sectoral policy.

The Ministry of Environmental Protection is the main state regulatory body in the field of environment. It consists of several Departments responsible for different activities: the Department of Environmental Policy and International Relations; the Department of Environmental Economics; the Black Sea Protection Convention Department; the Department of Environmental Education, Popularisation and Public Relations; and the Press Centre. The Ministry has regional (municipal) Department of Environment in every administrative region of the Republic of Georgia.

The Ministry of Environmental Protection and its regional representatives are state bodies responsible for environmental protection on the territory of Georgia. They coordinate activities of other state committees in the field of environmental protection: Hydrometeorology Department, State Ecological Examination Department, Water Resources Protection Department, etc. The Ministry of Environmental Protection administrates directly more than 60 regional committees and inspectors. Other committees, departments and agencies also play important role in establishing and enforcing environmental legislation and health and safety issues. Enforcement and inspection take place at the national, regional and local levels.

The main responsibilities of the Ministry of Environmental Protection include:

- Comprehensive management in the area of environmental protection;
- State control and monitoring of the use and preservation of natural resources, and monitoring compliance with ecological safety standards;

- General organisation and coordination of environmental monitoring and control;
- Approval of standards and regulations, participation in the development of standards regulating natural resources utilisation and protection of the environment
- Conducting the state environmental reviews;
- Lawsuits demanding compensation for damages as a result of violations of environmental protection legislation.

1.2 Permitting Authorities

The set of standards used in Georgia under the Soviet regime was based on so-called Maximum Allowable Concentrations (MACs). Such MACs, set by several departments of the Ministry of Environment, still exist in relation to discharge of waste, water quality and emissions to air. Implementation of standards has not been successful: the standards were often unrealistically strict and the economy did not allow implementation of such strict standards. At present, new type of standards are under development, based on EPA provisions. Although, the principal progress in this field depends on new water and air laws replacing the 1984 and 1981 Codes.

The procedure for permitting industrial installations is based on the law "On Environmental Protection", which includes the following aspects:

- maximum allowable (or permissible) concentrations of toxic pollutants (MAC or MPC) - these constitute the basis for developing standards of permissible environmental loading (MAC, known as "PDK" in Russian, is normally calculated in mg/m^3);
- maximum allowable level of noise, vibrations, magnetic fields, and other harmful agents;
- maximum allowable level of radiation;
- maximum allowable waste output per specific time limit and per specific agent (known as "PDV/PDS" in Russian) - set according to the specific function and conditions of the site;
- maximum allowable use of pesticides in agriculture;
- standards for environmental loading;
- maximum allowable standards for toxic substance residues in food products;
- the obligation to respect protected zones around any industrial or other type of site; and
- the requirement for final products to meet environmental standards.

PDK standards are determined for the following:

- specific air pollutants;
- specific surface water pollutants; and
- specific soil pollutants.

PDV/PDS norms are calculated for each industrial site on a time and pollutant basis as a function of the local conditions of site operations.
The "Temporary Allowed Waste Output" (known in Russian as VCV) refers to the limits imposed by the permitting authorities for industrial sites which cannot meet the PDV/PDS norms without changing its main production technology.

All permissible standards for industry environmental impacts are determined by state-empowered environmental protection agencies, state ecological examination committees and the state agencies for sanitary and epidemiological control. The Department of Sanitary and Epidemiological Control now work under the authority of the Ministry of Health.

These agencies are known as "SAS" and have a reputation for fierce resistance to whatever they consider as improperly prepared or poorly completed work in the field of industrial environmental impact assessments.

All industrial projects must be coordinated with both the Committee for Environmental Protection and with the Sanitary and Epidemiologic Control officials at the local level in cases where the project is of local importance. The project should be coordinated at both the state and local levels, however, if it is likely to effect several regions. Based on the predetermined standards, industrial sites are assigned allowances for waste output in all forms, including gaseous emissions, waste water/effluent discharges, and industrial, urban, or other solid waste.

1.2.1 Permitting Process

Land
The land on which an industrial installation is to be developed must be bought or leased. The local authorities in the region must be contacted in order to initiate the construction permitting process.

Project Authorisation
Once local authorities of the region has issued a Decree authorising the lease or sale of the land for development as an industrial site, the project will require further agreement from the following entities:

- local architectural authorities;
- local environmental authorities;
- local sanitary authorities (Ministry of Health, Department of Sanitary and Epidemiologic Control);
- local fire inspection;
- local technical inspection (Gostechnadzor); and
- local energy commission (for energy use limits) as there might be electricity shortages in some regions.
-

The control is normally accomplished in two stages:

- the preliminary stage covers the technical and economic foundation of the project;
- the final stage covers the working project itself.

Documentation Required
The most important issue is obtaining permission from the State Committee for Environmental Protection, which will require:

- the carrying out of an environmental impact assessment by a Georgian company holding a proper state license for such work or by officials of Sate Ecological Examination Department;
- a State Ecological Expertise, ordered by the Committee for Environmental Protection at the investor's own expense; and
- an (optional) Public Environmental Expertise. This step is not obligatory but can help to influence public opinion, particularly if carried out by experts with a serious reputation, and producing an independent ecological expertise of the project.

All documentation must be prepared in the Georgian language.

Working Project
The actual project implementation must be carried out by a specialised Georgian company properly certified for such activities, meaning it holds a special state license for designing industrial facilities. The basic western design will have to be adapted to Georgian standards in order to comply with the "Construction norms and rules" (standards, used in the soviet system but still in force).

Normally, the contractor that prepares the Georgian version of the working project documentation is also called upon to coordinate the project with all local authorities.

Property Registration
The purchase or lease of all lands is to be registered with the Department of Land Resources. Upon completion of construction, the project owner must register the constructed structures with the same Department of Land Resources, and obtain a certificate of property (without which no fixed property can be later sold).

This process can take from 30 to 90 days, depending on how well the basic documents have been prepared.

In the case of demolition of existing structures, agreement must be obtained from the owner of the land (if leased) and the State Architectural Committee (if buildings have any historic and/or cultural value).

All demolition must be registered with the Department of Land Resources.

On-Going Legal Support
On-going legal support is strongly advised for all such projects, making use of experienced and certified Georgian legal counsel holding state licences and contacts with local authorities and local institutes.

Environmental Permits
As mentioned elsewhere, environmental standards are established according to the region and the area in which the site will function.

1.2.2 Environmental Assessment

Information is not available at the moment. Waiting for documents to come. The environmental assessment procedures in Russia are presented below.

The coordination of industrial and other projects is carried out via the environmental expertise executed on the basis of, and in compliance with, the law "On Environment Protection" and on the basis of, and in compliance with, the Law "On State Ecological Examination". Their are two main forms of environmental expertise in accordance with the law: public (i.e., non-state) expertise and state environmental expertise.

Public (non-state) expertise
The public (non-state) expertise can be executed before, during, after and separately from the State environmental expertise. After execution, and in case the results of the Public environmental expertise are approved by the organs of the State environmental expertise, the decisions made by the public environmental expertise acquire the authority of a State decision and are legally binding.

The public (non-state) expertise can be initiated by citizens, public associations, and municipal communities. The initiators wishing to proceed with the public environmental expertise of a project have to be State-registered, must follow a legally prescribed form of the expertise, and must inform the public about the initiation and the results of the public expertise.

State environmental expertise
The State environmental expertise is financed by the investor in the project. The investor should provide the organs of the State environmental expertise with all the documentation necessary for adequate analysis of the project and its impact on the environment. The organs of the State environmental expertise are empowered to send orders to commercial banks to halt all financial operations linked to a project that does not receive positive approval of the State environmental expertise.

The organs of the State environmental expertise are obliged to inform the Government Attorney's Office and other State authorities of all infringements to the State environmental

expertise for measures to be taken to stop all projects that are not approved by the State environmental expertise.

1.3 Inspection Authorities

Inspections ("Environmental Control") are authorised by the law "On Environmental Protection" in the following forms:

- state service for monitoring environmental conditions,
- state inspections,
- (on site) production inspections; and
- public inspections.

The main authorities for carrying out environmental inspections are as follows:

- Authorities of general competence, such as the Government of Georgia and local administrations;
- Specially empowered State agencies, including:
  - ◊ State Department for Sanitary and Epidemiological Control;
  - ◊ State Department for Land Resources Protection and Waste Management;
  - ◊ State Department of Subsoil Protection; and
  - ◊ State Committee for Construction.
- Ministry of Environmental Protection;
- State Department of Hydrometeorology and Environmental Monitoring;
- Department of Water Resources Protection;
- Department of Forests Protection;
- Department of Air Protection;
- Department of Biodiversity Protection;
- Department of Fish Resources Protection;
- Ministry of Internal Affairs.

The Ministry of Environmental Protection now coordinates all other state agencies with environmental inspection responsibilities.

On-site production inspections are executed by the industries themselves using their own or other certified laboratories. State environmental monitoring is organised by the Ministry of Environmental Protection, which mainly uses the Department of Hydrometeorology and Environmental Monitoring for actual monitoring.

Monitoring of land is executed by the Department of Land Resources Protection and Waste Management with the participation of the Ministry of Environmental Protection, the Ministry of Agriculture, and other governmental bodies. According to the law, land may only be used for the purposes for which it was assigned, regardless of the form of ownership. The authorised uses are identified in the documents confirming the right of property. Inspections are executed by the local organs of environmental control (state inspectors or a specially created commission) which, on the one hand are to send a preliminary notification to the actor to be inspected, and on the other hand can carry out unannounced inspections on the basis of information received from third-party sources.

The general responsibilities of the State environmental control officials include the following:

- to visit facilities and organisations regardless of the type of property, including military installations;
- to check the functioning of pollution control equipment, and to determine if they comply with the law;

- to issue permits for waste output, related to the disposal of solid and other waste;
- to determine the standards for waste and toxic pollution emissions in coordination with the organs of sanitary and epidemiological control;
- to determine the necessity for organising the State expertise and to control the implementation of the resolutions formulated by the expertise;
- to require the elimination of any uncovered defects in the planning and functioning of pollution control equipment;
- to arrest those guilty of infringement of environmental protection regulations and to institute administrative and criminal proceedings against persons and companies; and
- to make the decisions to limit, to suspend or to halt the functioning of any industrial activity causing damage to the environment.

These decisions are obligatory for all ministries, organisations, companies, officials and citizens. The state environment inspector is empowered to do the following.

- Issue a directive following a predetermined form in which he or she can prescribe several measures to be taken by the industrial agent to ensure their activities comply with the environmental law (such directives must have a warning that in cases where the industrial agent does not take adequate measures, the materials will be sent to the administrative commission for punishment to be applied.);
- to issue a Protocol (a record of proceedings) reflecting an infringement to the environmental law or other environmental norms and to send it directly to the administrative commission for punishment to be applied;
- render a decision (make an enactment) for punishment application on persons guilty of violating environmental regulations;
- issue a command for the industrial agent to halt all exploitation of a site until the infringements to the environmental regulations are corrected (such a command should have a warning to send notification to the bank to suspend all financial operations of the industrial agent in question.);
- can send to the bank servicing the industrial agent a command (using a special form) to stop the financial operations on the account of the industrial agent in question.

1.3.1 Environmental Fees

Environmental fees can be assessed for:

- the use of natural resources;
- the use of the natural resources beyond the authorised limits or for "irrational" use of natural resources; and
- emissions of environment pollution.

Land use fees are determined by the Code for Lands, 1984.

Fees are also prescribed by the "Code for Water", 1984, in the form of:

- water resource use fees;
- fees for reconstruction and protection of water resources which include payments for:
  - ◊ water abstraction within the allowed limits.
  - ◊ water abstraction in amounts exceeding the allowed limits.
  - ◊ wastewater discharges to bodies of water within the allowed limits.
  - ◊ wastewater discharges to bodies of water in quantities exceeding the allowed limits.
  - ◊ wastewater discharges containing pollutants in quantities exceeding the allowed limits.

A charge for issuing a licence for using a body of water is collected in the amount determined by the respective state environmental control administration; the cost of the licence is based on the expenses linked to the execution of the expertise for using this body of water.
The fee levels for using natural resources should be determined in accordance with the procedure for PDV/PDS identification for each industrial/commercial agent. The fees for using natural resources are calculated on the basis of individually determined standards. Initially the

fees were introduced by the Soviet Government Decree No. 32 of 1 January 1988.Based on this Decree the Ministry of Environmental Protection has developed and approved two basic forms of fees for using natural resources:

- fees for waste disposal and for other forms of harmful impacts on the environment within allowed standards (PDK). This fee is calculated by multiplying the rates (per measurement unit of pollutant) by the quantity of the pollutant. The results for each pollutant are tallied.
- fees for waste output and for other forms of harmful impact on environment within the allowed limits (PDV/PDS). This fee is calculated by multiplying the basic rates per pollutant by the difference between the standards and the limits per pollutant. The results for each pollutant are tallied. In cases where the facility exceeds the waste output limits, the fee calculation will be done by multiplying the rates foreseen for the limits by the amount of actual excess waste output. The results for each pollutant are tallied. The received sum is given the coefficient five which means it is multiplied by five. In cases where a facility does not have a properly formulated permit for waste output, all the mass of the wastes is considered to exceed the limits and is to be paid in accordance with the procedure for the limit rate waste output.

1.4 Health and Safety Administrations and Agencies

The State Sanitary and Epidemiological Service is the main controlling body regarding occupational health and safety issues. The official bodies and institutions of the State Sanitary and Epidemiological Service represent the unified system, headed by the State Committee of Sanitary and Epidemiological Control. The State Sanitary and Epidemiological Service consists of the following organisations:

- State Committee for Sanitary and Epidemiological Control of the Russian Federation;
- Centres for Sanitary and Epidemiological Control in the autonomous republics and regions, cities;
- Scientific Institutes for issues of sanitary and epidemiological control;
- Educational Institutes and Colleges responsible for training specialists in the field of sanitary and epidemiological control.

The State Committee for Sanitary and Epidemiological Control is the official body which issues the state sanitary norms and regulations.

Together with state technical inspection and representatives from trade unions, sanitary-epidemiological inspections are responsible for issuing permits for construction and operation of production buildings, constructions and equipment. It is required that any project design or construction works comply with requirements of the occupational health legislation which includes rational use of the territory and production premises, adequate operation of the equipment and organisation of production (technological) processes, protection of workers against harmful and dangerous production factors, compliance with sanitary and hygienic norms and regulations regarding working facilities and places, establishment of sanitary facilities. Legislation provides economic incentive for enterprises to comply with the occupational safety standards. The privileged taxes can be applied if enterprise introduce or develop new (safer) technologies or production facilities, produce protective equipment (collective or personal) and control devices. On the contrary, if enterprise does not comply with safety legislation, the fines or damage should be paid. An acceptance commission check in details the compliance of enterprise with occupational health and safety norms and regulations. All members of the acceptance commission (representatives of trade unions, technical inspections and sanitary-epidemic control) should sign inspection report and acceptance

certificate for new and redeveloped facilities. All working facilities should have safety certificate.

The Standardisation, Metrologic and Certification Committee (Gosstandard) is dealing with the certification of production equipment and protection means.
Administration of the enterprise must ensure that all working places are equipped with adequately safe facilities and protection equipment is provided. Administration must ensure that all new raw materials and semi-finished products used for production purposes have passed special examination regarding their effect on human health.

The occupational safety norms and regulations could be intersectoral, sectoral and local for enterprise. The intersectoral norms and regulations state the health and safety rules common for several sectors of economy. They are developed by the Ministry of Labour. The sectoral norms and standards are established by appropriate ministries, departments and state control bodies. They are specific for particular type of production activity. In accordance with and on the basis of intersectoral and sectoral norms and standards ministries, departments and state control bodies can approve occupational safety instructions. An administration of enterprise, in cooperation with trade unions, can develop local safety rules, based on such instructions.

The occupational health and safety standards in Georgia consist of the following:

- the system of occupational safety standards (SSBT). The state standards (GOSTs) are approved by the Gosstandard and the State Architectural Committee; the sectoral standards are approved by an appropriate central federal executive bodies; the enterprise standards are approved by enterprises;
- the sanitary norms, standards and hygienic regulations which are approved by the State Sanitary and Epidemiologic Control Committee and the Ministry of Health;
- the safety rules (fire safety, radioactive safety, biological safety, technical safety, etc.).

The Mintrud coordinate the development of safety rules.

An enterprises must assign annually some funds for the occupational safety measure in accordance with collective agreements. These funds must be spend exclusively on improvement of employees health and working conditions.

2 ENVIRONMENTAL REQUIREMENTS

2.1 Environmental Management Programme

Georgian legislation does not require companies to develop any special form of environmental management system, nor that any special personnel be hired for managing the environmental protection and pollution control equipment at enterprises. However, compliance with all applicable standards, limits, and quotas prescribed by the environmental authorities is considered extremely important. It is common practice among larger companies to hire specialised environmental personnel, to equip their own laboratories for all required environmental testing and analyses, and to carry out their own laboratory certification.

Moreover, companies are required to maintain an environmental register for all aspects of inspections, maintenance and operations of their environmental protection and pollution control installations and equipment. In addition, annual reports must be prepared and presented on industrial waste, secondary waste generated by pollution control equipment, use of chemicals, actual emissions, and waste generation and disposal.

2.1.1 Regulatory obligations

The main principals of Georgian environmental policy and legislation are stated in the Constitution. It stipulates that "the citizens have the right to live in a favourable environment, to have access to authentic sources of information on its actual condition and to be compensated in cases of detriment caused to health and to wealth by environmental infringement."

The framework of environmental policy and regulations of Georgia is established in the following legislative documents:

- Law on Environmental Protection, adopted in 1996;
- Land Code, 1984;
- Water Code, 1984;
- Law on Air protection, 1981;
- Regulations of the Sanitary and Epidemiological Service of the Georgian Health Ministry;
- Law on State Environmental Expertise, 1996;
- Law on Environmental Permits, 1996;
- Law on the Wild Fauna Protection, 1996;
- Law on Protected Areas System, 1996;
- Law on Transition and Import of Waste to the Territory of the Republic of Georgia, 1995;
- Law on Soil Protection,1995;
- Law on Basic Taxation, 1994.

The following drafts have been prepared or are under preparation by the Parliamentary Commission on Natural Resources and Environmental Protection and by Ministry of Environment:

- Law on Waste Management;
- Law on Hazardous Substances;
- Water Law.

Within the above framework, State Committee of Standardisation (Gosstandard) issues state standards for air and water quality, noise and vibration, effluent quality and many others. The Ministry of Environmental Protection develops guidance and procedures for application and utilisation of standards in particular areas of environmental protection.

2.1.2 Planning/Implementation of Environmental Programmes

In accordance to the Law on *State Ecological Examination*, adopted in 1996, enterprises are required to develop an environmental management plan at the very early stage of planning activity. The Environmental management plan and mitigation measures against negative environmental impacts must be included in the planning application submitted to the local branch of Goscomecology for approval of the proposed activity.

All normative documentation should state the relations between state authorities and developer, specify the responsibilities and liabilities of both parties and determine the intended environmental protection measures as well as economical and social impact on the region. The environmental part of the documentation should include an environmental assessment of the proposed area and the following normative documentation:

- type and amount of natural resources to be utilised;
- type and amount of pollutants to be generated, including wastes;
- physical impacts;
- noise, radiation, heat and other impacts.

The technical part of the documentation should include:

- information on technical and technological processes;
- information regarding materials used for production and characteristics of the final product, which include:
  - ◊ physical and chemical characteristics of the materials;
  - ◊ characteristics of bioresistivity (biodegradability) of materials in natural environment;
  - ◊ list of environmental impacts;
  - ◊ assessment of the impact on the abiotic components of the environment (changes of chemical characteristics of air, physical-chemical characteristics of soils;
  - ◊ sanitary and hygienic assessment of the materials;
  - ◊ information on materials utilisation, storage, transportation and disposal of;
  - ◊ measurements to provide environmental safety for utilisation, storage and transportation of the materials;
  - ◊ reuse, recycling and disposal methods for materials;
  - ◊ specific measures to provide safe disposal of the materials.

The Law on *State Ecological Examination* states that prior to any economic activity or development being undertaken it is necessary to accomplish the assessment of potential impacts of the proposed activity on the environment. It lists more than 30 activities for which a full EIA is obligatory. Among them are production of asbestos containing materials, chemical industry, paper production, highways and railways construction, construction of airports, wastewater treatment plants, large water intakes, etc. It is also required that the following information is included in planning documentation: purpose of the development or proposed activity; alternatives; state of environment in proposed area; potential negative impacts; mitigation measures; monitoring and environmental management plan.

2.1.3 Environmental Personnel

Georgian legislation does not require companies to develop any special form of environmental management system, nor that any special personnel be hired for managing the environmental protection and pollution control equipment at enterprises. There are no specific requirements to appoint a site compliance officer. However, compliance with all applicable standards, limits, and quotas prescribed by the environmental authorities is considered extremely important. It is common practice among larger companies to hire specialised environmental personnel, to equip their own laboratories for all required environmental testing and analyses, and to carry out their own laboratory certification. The Law on Environmental Protection, 1996, states that enterprises, institutions, organisations and citizens must maintain the established

environmental quality standards by keeping to the approved technologies, by implementing ecologically safe technologies and production processes, reliable and effective operation of treatment works, facilities and means of control, treatment and utilisation of wastes, by accomplishing environmental activities and programmes to ensure the protection of lands, sub-soils, waters, forests and vegetation, animals, and reproduction of natural resources.

2.1.4 Environmental Record Keeping

Companies are required to maintain an environmental register for all aspects of inspections, maintenance and operations of their environmental protection and pollution control installations and equipment. In addition, annual reports must be prepared and presented on industrial waste, secondary waste generated by pollution control equipment, use of chemicals, actual emissions, and waste generation and disposal.

Other requirements regarding environmental records of air emissions, wastewater discharges, water use and waste disposal are presented in the relevant sections of this report.

2.2 Air Quality

2.2.1 Air Quality Regulations and Requirements

The Law on Air Protection, 1982, contains general provisions for air protection and regulation of impacts on air quality in the process of economic and social development. It defines the general obligations to protect air against pollution by industries, transport, energy production and other sources, establishes a system of environmental standards and permits and contains measures to control acid rain, trans-frontier pollution, climate change and depletion of the ozone layer.

Air quality standards are introduced by federal health protection and environmental protection agencies. Air quality standards are established for each type of air pollutant and physical effects (radioactive, electromagnetic, sound, etc.) separately measured in milligrams per cubic metre of air, both for total maximum concentration and daily average concentrations. These standards are established separately for work place and stack emissions.

2.2.2 Inventory of Air Emission Sources

The Law defines two sources of pollution: mobile and stationary. Standards for maximum permissible levels of emissions are established for each individual type of stationary source and each mode of transport.

Maximum allowable concentrations (MAC) have been developed for 479 air pollutants. MACs play the role of a limiting factor while at the same time serving as a basis for the calculation of maximum allowable emissions. These are determined by considering the background level of pollution and the existing level of industrial impact on the environment in a given territory.
There are three main levels in determining the harmful impact of a pollutant:

- maximum instant impact and the corresponding concentration.
- maximum daily impact and the corresponding concentration.
- In absence of the previous two basic parameters (certain pollutants do not have any officially prescribed parameters) there exists an "provisional level of safe concentration." Where certain official parameters of Maximum allowable concentration do not exist, the concerned company must calculate it on its own and present the data for approval to the Sanitary and Epidemiological Control administrations, which consider it in coordination with the State Committee for Environmental Protection. These two authorities then take a mutually agreed decision.

This is a rather long process, the cost of which is borne by company concerned. Thus, it is strongly recommended that the company begin the process as early as possible, particularly if the emissions are expected to contain any rare particular pollutant.

The ventilation, heating, and air conditioning in new buildings are to be designed and installed in accordance with the Construction Norms and Rules No.2.04.05.-86 approved by Decision No. 49 of 15 December 1986 of the USSR State Committee for Construction (still in force).

2.2.3 Air Emission/Stack Plan

An emission standard is a limitation per unit of time on the maximum quantity of a pollutant that may be released into the air by a particular source. Emission standards are determined by the owner of the air emission source or its administrative entity according to the procedures described in *Limitations of Maximum Permissible Emissions and Physical Effects, 1981.* Emission standards should then be approved by the environmental or sanitary control agencies within their competence.

Maximum allowable concentrations and air emissions are to be calculated and agreed for:

- the workplace; and
- stack emissions.

Stack height plays an important role, as does the wind rose at the location of the facility, along with background air contamination of the region.

2.2.4 Air Emission Characteristics and Monitoring Plan

Emissions from the facility are to comply with the maximum allowed concentrations (MAC), as noted in the table below, although it should be noted that emission limits in Georgia can be as much as one order of magnitude more restrictive than most other countries. As a result, in certain cases, the MAC may not even be measurable with current technologies and are practically never enforced. In most cases, it is necessary to work with the authorities to ensure permit conditions are reasonable for the level and type of pollutant emission anticipated.

Table 2.1: Maximum Allowed Concentrations (MAC) of Selected Pollutants in Facility Emissions (mg/m^3)

Pollutant	Class of Danger	MAC (punctual)	MAC (daily) (24 hours)	Approx. Level of Safe Concentration
Dioxide of Nitrogen	2	0,085	0,04	
Oxide of Nitrogen	3	0,4	0,6	
Nitrogen three-fluoride	3	0,4	0,2	
Acrilonitrile	2		0,03	
Caprolactam	3	0,6	0,6	
Sulphur Dioxide	3	0,5	0,05	
Aniline	2	0,05	0,03	
Acetone	4	0,35	0,35	
Barium carbonate			0,004	
Barium oxide	1			0,004
Vanadium 5-oxide	1		0,002	
Particulates	3	0,5	0,15	
Vinyl acetate	3	0,15	0,15	
Bismuth oxide	3		0,05	
Hydrogen cyanide	2		0,01	
Gexan	4	60,0		

Asbestos containing dust	1		0,06	
Vinylplast dust				0,01
Natural zeolite dust				0,02
Paper dust				0,1
Wooden dust				0,1
Brass dust (by Cu)				0,003
Paraffin dust				0,6
Cement dust	3	0,3	0,3	
Dolomite dust	3	0,5	0,15	
Polypropylene dust				0,1
Phenolformaldehyde resin dust				0,05
Mercury metallic and its oxides	1		0,0003	

In addition to air emission regulations, Georgia has developed some requirements regarding air quality in buildings and at the working places. These requirement are specified in GOST 12.1.005-76 *Temperature, Moisture and Content of Pollutants in the Air of Working Zones.*

2.2.5 Emissions Reductions

The Law on Air Protection states that all enterprises should implement measures to reduce their emission. Measures to protect air must not cause the pollution of soils, surface and underground waters and the general environment. According to the Law on Air Protection enterprises are required to reduce their air emission in cases of unfavourable meteorological conditions. An air emission should be limited, stopped or prohibited if it exceeds permissible level or threatens the public health.

2.2.6 Record keeping

According to the Law on Air Protection, 1982, enterprises are required to keep records of their emissions including type, composition and amount of pollutant.

2.3 Emergency Preparedness and Response

There is no information available about Emergency Preparedness and Response for Georgia. For Russian Federation the regulations are following.

Chapter VIII of the Law on Environmental Protection concentrates on the handling of extraordinary environmental incidents and disasters, particularly in Articles 58 and 59 (see Annex 1). The Law applies primarily to large-scale environmental disasters on a regional and national levels (for emergency classification see below), and introduces the notion of a "zone of extraordinary environmental situation" which can be declared by the President of Russia in the form of a Decree which is requested and prepared by the local environmental protection authorities. All activities having a negative impact on the environment can be suspended in such zones until the required remedial measures are taken. The law also specifies that the financing of such an environmental measure is to be provided by the responsible parties (companies, ministries) as well as funds for specific Federal environmental programmes.

Law of the Russian Federation On Protection of Population and Territory from Emergency Situations of Environmental and Technological Nature, December 21, 1994, №68-F3, which was signed by the President on 21 December 1994, also addresses the responsibility of industrial entities for environmental disasters. According to the law, companies must promptly inform the environmental protection authorities of the current (normal) and of any potential extraordinary environmental situations that could arise at their facilities. They must also make

provisions for the necessary financial and material resources required to deal with the consequences of a potential environmental disaster. The Federal government issued Decree No. 1113 "On unified state system of extraordinary situations prevention and the consequences elimination" on 5 November 1995, according to which industrial operators must be prepared to inform the Ministry of Civil Protection and Extraordinary Situations of any environmental disasters that occur at their facilities.

In accordance with the above mentioned Law was issued the classification of emergency situations, approved by the Government of the Russian Federation on 13 September 1996. It classifies emergency situations as on-site, local, territorial, regional, national and transeboundary. Emergency can be qualified as an "on-site emergency" if less then 10 people were injured or living conditions of less then 100 people were effected or if damage is less then 1000 "minimum wages" (special term introduced in Russia for social security) or if impacted area does not exceed the area of enterprise. On-site emergency situation should be eliminated by enterprise and at its own expenses.

The coordination of disaster prevention is to be done in compliance with Federal Government Decree No.164 "On interministerial Commission for extraordinary situation prevention and consequences elimination" of 20 February 1995. The Minister of Civil Protection and Extraordinary Situations is appointed as head of this Commission. Industrial operators must maintain direct contact with the Ministry in the event they conduct hazardous production processes. They must also maintain direct informative contact with the Ministry of Health's Department of Sanitary and Epidemiological Control, which is empowered to enforce compliance by any industrial activity with the requirements of the Federal law "On sanitary and epidemic well-being of the population" initially dated 19 April 1991 and incorporated into Federal law No. 89 of 19 June 1995, which came into force on 22 June 1995.

Official Letter No. 01-11/29-2618 of the former Ministry of Environmental Protection, registered in the Ministry of Justice on 11 September 1995, obliges industrial operators to maintain direct informative contact with the Goscomecology. The same requirements to inform the environmental protection authorities of any environmental incident or disaster immediately (on the same day of the incident) by telephone were reconfirmed by Order No. 29 of 23 June 1996 of the same Ministry.

In addition to the above-mentioned regulations, there are fire safety regulations and flood safety regulations.

According to the *Fire Safety Regulations* PPB-01-93 for the Russian Federation, in force from 1 January 1994, every enterprise must comply with the requirements set in the standards, construction norms and regulations, norms for technological design, regional norms and requirements for specific industries; develop an evacuation plan and provide necessary equipment for emergency situations; undertake regular fire preventive measures and train staff. Enterprises are required to undertake periodical fire-alarm training (according to the requirements of the local Fire Safety Service).

Flood safety is regulated by Order No 353 of 26 March 1998 on *Flood Safety on the Territory of the Russian Federation in 1998.* This document states requirements and preventive measures for floods in 1998.

2.4 Hazardous Materials

2.4.1 Inventory of Hazardous Materials

Requirements for Georgia have to be obtained. For Russian Federation regulations are following.

According to the Decree of the Government No869 of 12 November 1992 on State Registration of Potentially Dangerous Chemicals and Biological Substances all potentially dangerous chemical and biological substances should be registered with the Russian Register in order to prevent their adverse effect on the environment and public health. All individual chemical and biological substances (compounds), manufactured and/or applied on the territory of the Russian Federation should be pertained to state registration. Substances, designed for production or use after 31 March, 1993, so called "new substances" should be registered before their production or use will start. Substances, produced or imported to the Russian Federation before 31 March, 1993, "old substances", should be registered within three years from the publication of the document (25 May 1993). There is a certain fee for State Registration and all applications should be submitted to: 18-20 Vadkovskii per., Moscow 101479, Russian Federation. Documentation should include the following:

- the cover letter, signed by paying party (enterprise);
- the fulfilled "list of information, required for state registration of potentially dangerous chemical and biological substances";
- the list of references, on basis of which "list of information" have been completed;
- payment order;
- expert conclusions about possibilities to publish in mass media the materials of state registration.

2.4.2 Hazardous Materials Storage Area Design

These requirements were developed during Soviet Union so they are likely to be still applicable in Georgia.

The open storage area for hazardous materials should be enclosed by a fence of not less than 2 meters high and embanked. The size of the embankment is regulated by the construction norms related to the specific production and type of the hazardous materials. Within the embankment, the storage area must be carefully designed and covered with gravel. The storage area should be elevated above ground for 0.2 m and surrounded by a ditch to collect storm water run off.

The storehouse for inflammable materials must not have more than one floor. Windows in storehouses for gaseous materials should be painted or covered with protection against sun and heat. The storehouse must be naturally ventilated.

Liquid hazardous materials such as oil and diesel can be stored underground in specially designed containers covered by 2 m of earth.

2.4.3 Transfer and Handling of Hazardous Materials

According to the Fire Safety Regulations, the following requirements are applicable to the transportation of hazardous and flammable materials:

- all containers must be marked according to the toxicity of transported materials and accompanied with documentation specifying the type of transported materials, amount and final destination;
- hazardous materials should be packed in containers or other packaging material in accordance with the requirements of state standards and type of material. Packaging material and containers must be firm, in good order, prevent spillage and provide safe transportation of the materials;
- flammable materials must be supplied with fire-extinguishing equipment, placed in a hermetically sealed packaging or containers;
- glass containers should be placed in a firm wooden or plastic boxes with fire-resistant and absorbent filling;
- metal and plastic containers should be placed in wooden boxes;

- solid, dry substances should be transported in small lots, solid substances which are packed in sacks must be additionally packed in a hard cover (metal or plywood drums);
- loading-unloading areas should be equipped with special facilities (stretchers, ladders, etc.) to provide a safe working environment. Hand-cart or special stretchers with sockets must be provided for glass containers, or otherwise they can be carried by two people in a basket with handles. Workers should be provided with personal safety clothing. Loading and unloading should be carried out in accordance with warning signs and instructions;
- filling and draining of containers must be carried out through pipes and hoses.

2.5 Environmental Due Diligence

Prior to undertaking any economic activity or redevelopment, it is necessary to submit specific documentation to the state environmental expertise (see section 2.1.2 above). This documentation should contain a feasibility study for the proposed activity or redevelopment and an environmental impact assessment.

2.5.1 Soil and Groundwater Contamination

Protection of the land in Georgia is based on the "Code of Land", adopted in 1984. Groundwater is regulated by the "Water Code", adopted in 1984. Soil contamination levels are calculated on the basis of the "List of maximum allowable concentration of basic toxic matter in the soil.", Sanitary standards and Regulation No. 6229-91, Ministry of Health of the USSR, 1991. The following is selection of pertinent standards:

Table 2.1: Soil and Groundwater Maximum Allowable Contamination Levels

No.	Pollutant	Maximum allowable concentrations (µg/kg)
1	Acetaldehyd	10.0
2	Bensapiren	0.02
3	Benzene	0.1
4	Benzol	0.3
5	Vanadium	150.0
6	Isopropylbensol	0.5
7	Arsenic	2.0
8	Nitrates	130.0
9	DDT (sum)	0.1
10	Mercury	2.1
11	Pb + Me	20.0
12	S (elementary)	160.0
13	H_2SO_4	160.0
14	Furfurol	3.0
15	Cobalt (mobile)	5.0
16	Cu (mobile)	3.0
17	Ni (mobile)	4.0
18	Pb (mobile)	6.0
19	Zn (mobile)	23.0
20	Cr (mobile)	6.0

The *Law on Environmental Protection*, 1996, states the main principles of environmental liability. Enterprises, organisations and individuals are liable to pay the injured party for all damage to the environment and/or to health and for any loss of property in accordance with

existing legislation. Compensation for the damage could be made voluntarily or following a court order. The amount of compensation should be calculated in accordance with guidance and methods developed by responsible bodies or, in the absence of specific methods, should be equal to the real cost of environmental clean-up including damage to property and benefit losses. Compensation can be paid directly to the aggrieved party or to the state environmental funds if the damaged object is common property. If several persons inflict the loss the charge should be calculated according to individual contributions, this includes research and design institutions and construction companies.

The_GOST 17.4.2.01-81 *"Soils. Indicators of sanitary state"* provides a matrix of various types of contamination and the zones or locations in which they would require investigation.

The enforcement of environmental regulations and requirements lies with the local administrative authorities and local state environmental committees and bodies. The existing legislation does not particularly specify particular environmental liability for the cases when environmental damage have been caused by previous owner of the site.

2.6 Hazardous Waste

2.6.1 Hazardous \Waste Regulations and Requirements

The Law on *Environmental Protection*, 1996, establishes a number of stringent requirements concerning safe handling of industrial wastes and methods of their collection, disposal and utilisation. For example, it is prohibited to dispose of toxic wastes on sites in the vicinity of cities or other settlements or natural recreational or specially protected areas. It is envisaged that environmental protection and sanitary control agencies are double checking the dangerous waste management practices.

There is no available information on waste management in Georgia. Here are the requirements for the Russian Federation.

The Federal Act on *Industrial and Domestic Wastes* establishes the legal responsibilities for all enterprises and persons who generate or handle domestic and industrial wastes. The Federal Act sets out requirements regarding the handling and transportation of hazardous wastes. All hazardous wastes must be properly classified on the basis of their composition and characteristics, registered and labelled on site and then handed to the specially trained operator who possesses the state license.

2.6.2 Inventory of Hazardous Wastes

The Order of Goskomecology on *Federal Waste Specification* provides classification system for all types of wastes. The catalogue has five classification levels: blocks, groups, subgroups, positions and subpositions. The highest level of classification is blocks, formed according to the origin of waste: organic (animal and green waste), mineral waste, chemical waste and domestic (including household) waste.

All hazardous wastes are classified into four categories according to the degree of toxicity: (I) extremely hazardous; (II) highly hazardous; (III) moderately hazardous and (IV) least hazardous.

The enterprise should present to local branch of the Goscomecology application form for recording their wastes in the Waste Catalogue and information about every particular type of waste in two copies:

- origin of waste;
- aggregative state;
- chemistry of waste (percentage of all compounds) and methods of determination;
- toxicity of waste.

It is required to update those records once in three years.

The Instruction for the Determination of the Toxicity Index for Industrial Wastes, published by the Ministry of Health in 1987, provides methods to determine the toxicity index according to the maximum permissible level of pollutants in industrial wastes.

2.6.3 Landfill Sites

Under Order No 3133/84 on *Handling, transportation, treatment and burying of industrial toxic waste*, approved by Head Sanitary Epidemiological Doctor of former USSR and Regulation No 2.01.28/85 on *Construction norms and regulations,* approved by Gosstroj, waste disposal facilities are classified as following:

- facilities for household and construction waste;
- facilities for the treatment and landfilling of industrial waste;
- radioactive waste facilities.

According to Regulation No 2.01.28/85, waste disposal facilities are intended to centralise the collection, treatment and disposal of toxic waste from enterprises and companies. Chapter 4 of the Regulation covers sanitary instructions for the disposal facilities:

- Disposal facilities must be situated in the areas that are remote from residential areas
- The sanitary zone must be 3000 meters;
- The site must be bordered by a ring canal, etc.;
- The facility will be comprised of: a plant for treating the toxic waste, a landfill, a garage for waste transport equipment.

Only toxic waste of the first, second and third categories according to degree of toxicity would be accepted for disposal at such facilities. Radioactive waste and oil products are not acceptable for disposal in these facilities. The waste falling in the fourth category must be brought to household waste dumps.

2.6.4 Hazardous Waste Storage Practices

All industrial wastes produced by an enterprise should be packed according to their toxicity index: steel containers for first category; polyethylene bags for the second category and paper bags for the third category of waste. After packing, the wastes should be weighed, recorded and delivered to the storage sites for further transportation to the landfill sites. Fourth category wastes are piled up at storage sites.

2.6.5 Transportation and Disposal of Hazardous Waste

Hazardous wastes:

- should be transported in specially equipped and properly marked vehicles;
- should have a hazardous waste passport stating the composition and properties of the waste. The passports should be signed by an authorised person from the enterprise and should always be available for inspection when wastes are transported;
- should be accompanied by documents stating the amount of hazardous waste, reason and final destination of transportation.

Industrial waste, depending on toxicity and other properties, are disposed of either at the ordinary dumps or toxic waste landfill sites. The method of disposal is chosen depending on

the aggregate state, solubility coefficient, toxicity index and other special characteristics of the substance.

Ordinary landfill sites receive category II-IV wastes. The total volume permitted varies for each region depending on its natural capacity to assimilate and neutralise pollutants without causing harmful effects to the environment and public health. In order to reduce adverse effects on the environment the limits for waste generation and waste disposal are set by the Government of Georgia in Provisional Regulations on Payment of Taxes for Polluting the Environment with Harmful Substances, adopted by the Resolution of the Cabinet of Ministers No 1010 of 22October 1992, with amendments No379 of 13 May 1993 and No 402 of 24 June 1994.

2.6.6 Record Keeping

All enterprises or legal persons producing or handling wastes should keep records of wastes generated, reused, treated, transferred to or received from different organisations, and disposed of. All records should be kept for a certain period of time (to be set by the local authorities) and be available to present upon request of the competent authorities. All waste shipments must be accompanied by a "passport" containing information outlined in section 3.6.5 above.

2.7 Aboveground Storage Tanks

Specific requirements for above-ground storage tanks (ASTs) include the following:

- the storage area should be surrounded by fence at least 2 m high, embanked, elevated to at least 0.2 m above ground level and surrounded by ditch for storm water run off;
- it is strictly forbidden to use unsealed containers and locks, containers with warps and cracks, faulty equipment, control instruments, input pipes and stationary fire safety equipment; to have trees and bushes within the storage area; to place tanks on a flammable base; overload tanks; to pour products in or out during storms;
- spillage has to be cleaned immediately;
- on one embanked area there must not be more than four tanks within an area of 25x15m; distance between tanks must be not less than 10 m and distance to the embankment not less than 5 m. The distance to the next embanked storage area must be not less than 20m.

2.8 Waste Water

2.8.1 Wastewater Regulations and Requirements

The Water Code states that the discharge of waste waters (industrial, municipal, drainage and other) may be conducted only when:

- a permit is issued by the Agency for Use and Protection of Water Resources upon approval from environmental protection, sanitary and other related agencies;
- the discharges do not increase pollutant concentrations in water above the environmental quality standards.

When waste waters are discharged into water bodies classified for domestic and municipal use, the water quality standards must be observed at a distance of one kilometre upstream of the nearest point of water use. When waste waters are discharged into fishery water bodies, the standards must be respected at distance not more than 500m from the discharge point or the source of pollution.

Discharge limit values for pollutants are established individually for each enterprise or other source of pollution for the purpose of regulating the disposal of effluents into surface water bodies, ground water and onto land.

The Government of Georgia approved Provisional Regulations on Payment of Taxes for Polluting the Environment with Harmful Substances, adopted by the Resolution of the Cabinet of Ministers No 1010 of 22October 1992, with amendments No379 of 13 May 1993 and No 402 of 24 June 1994.

The Provisional Regulations prescribe the maximum permissible concentrations of pollutants for effluents discharged into water bodies, both on a permanent and temporary basis, with methods for establishing scientifically-based standards for effluents. Such standards are the basis for granting discharge permits. All water-using enterprises must have discharge permits related to maximum permissible discharges (MPD), maximum permissible concentrations (MPC), or for temporarily agreed discharges (TAD).

Discharge Limitations

The quality of waste water discharges to surface water (after pre-treatment) is determined by the "Regulations on Water Protection: Standard Rules" adopted by Official Letter No. 5/15-12 of 26 January 1991 by State Committee for Environmental Protection of USSR, and which came into force from 1 March 1991. The main requirements for the quality wastewater discharged to surface water are as follows:

Table 2.3: Requirements for wastewater quality

Pollutant or Parameter	Drinking Water Sources	Water for General Household Use	Fish aquatoria	
			"extra" and "first class" fish	"second class" fish
Suspended Solids	0,25 mg/l	0,75 mg/l	0,25 mg/l	0,75 mg/l
Floating matter	no floating matter should be visible on the surface of water			
Colour	no colour should be visible in a test-glass containing:			
	20 cm	10 cm	no colour at all	
Odour	max 1 ball directly or after chlorination	max 1 ball directly	no odour should be given to the meat or to the fish	
Temperature (°C)	max + 3° C above the average of the hottest month of the year		max + 5° C above the seasonal average	
pH	should not exceed 6,5-8,5			
Dissolved Oxygen	min 4 mg/l		6 mg/l in all seasons	4-6 mg/l by season
BOD compl.	3 mg/l	6 mg/l	3 mg/l	3 mg/l
COD	15 mg/l	30 mg/l	depends	
Chemical agents	within the maximum allowable concentrations (MAC)			
Lactosa positive bacilla	max 10.000 per litre	max 5.000 per litre	not regulated	
Colifagues	100 per l	100 per l		

The standards for waste water to be accepted by the municipal wastewater treatment facilities can depend on the regions where the waste is produced, but normally must meet the following standards:

Table 2.4: Standards for Wastewater Discharged to Sewerage Systems

No.	Pollutants	Allowable Concentration Limits (mg/l)	Sample Regional Allowable Concentrations (mg/l)
1	Suspended Solids	200	400
2	BOD complete	1000	1000
3	Fatty matter	60	50
4	Nitrogen (ammonia)	18	18
5	Chloride	1000	1000
6	Sulfate	500	500
7	Oil products	0,3	0,3
8	Anionic surfactants	1.0	1.0
9	Fe	0,5	0,5
10	Phosphorus of phosphate	2,7	2,7
11	Phenols	0,04	0,0-0,05
12	Cu	0,04	0,04
13	Ni	0,03	0,04
14	Zn	0,03	0,04
15	Cr -3	0,6	0,8
16	Cr -6	0,2	0,2
17	Pb	0,5	0,5
18	Al	0,2	0,0
19	Manganese	0,03	0,0
20	Formaldehyde	0,9	0,0-1,2
21	Fluoride	1,4	0,0-1,1

Quality limits for stormwater discharges (direct output) are as follows:

Table 2.5: Stormwater Discharge Limitations

No.	Pollutant	Allowable Concentration Limits (mg/l)	Sample Regional Allowable Concentrations (mg/l)
1	Suspended Solids	3-22	7,5-110
2	BOD complete	3,0	3,0-20
	COD	30	30-80
3	Mercury	0,0001	0,0
4	Nitrogen (ammonia)	0,4	0,0-0,5
5	Chloride	300	300
6	Sulphate	100	100
7	Oil products	0,05	0,05-0,5
8	Anionic Surfactants	0,5	0,0-0,05
9	Fe	0,1	0,1
10	Phosphorus of phosphate	0,2	0,0-0,2
11	Phenols	0,01	0,0
12	Cu	0,001	0,002
13	Ni	0,01	0,0
14	Zn	0,01	0,02
15	Cr -3	0,07	0,0
16	Cr -6	0,02	0,0
17	Pb	0,1	0,35
18	Al	0,04	0,3
19	Manganese	0,01	0,01
20	Cadmium	0,005	0,002
21	Cobalt	0,2	0,0

The regional Committees for environmental protection are empowered to determine the quality of the water to be accepted into local systems or for further cleaning or for direct discharge to surface water. For example, in Saint Petersburg the system accepts water with the following characteristics:

- pH within 6,5 to 9,0;
- Max temperature = 40°C;
- Max correlation COD: BOD complete = 1,5 or Max correlation COD: BOD-5 = 2,5* - * except for the basins with a separate system of collection of waste water.

Table 2.6: Maximum Allowable Concentration Limits for Selected Substances in Surface Water

No.	Pollutant	Maximum allowable concentrations for surface water used for fish reproduction (MAC) (mg/l)
1	Acrilamid	0,35
2	Acrylic acid	0,0025
3	Alumina bichromate	0,05
4	Ammonia salts	2,9
5	Ammonia bichromate	0,05
6	Ammonia	0,05
7	Aniline	0,0001
8	Acetone	0,05
9	Vanadium	0,001
10	Volframate	0,0011
11	Gexan	0,5
12	Titanium dioxide	1,0
13	Fe +2	0,005
14	Fe	0,05
15	Isopropyl alcohol	0,01
16	Cadmium	0,005
17	Cobalt	0,005
18	Paint components	0,1
19	Manganese ions	0,01
20	Cuprum ions	0,001
21	Cuprum	0,005
22	Carbamide	37,3
23	Arsenic	0,001-0,005
24	oils	0,05
25	Nickel	0,01
26	Mercury	0,0001
27	Pb 2+	0,1
28	Pb x	0,01
29	Sulphur	10,0
30	Sulphate ion	3,5 gr/l
31	Formalin	0,1 mg/l
32	Furan	0,01
33	Phosphorus elementary	absent
34	Zinc	0,05
35	Zn 2+	0,01
36	Cyanide	0,05
36	Chloride	300,0

Discharge Fees

Discharge fees are set depending on the permit type. There are two basic fees:

- fees for the discharge of contaminants within the norms of MPD
- fees for the discharge of contaminants exceeding the MPD

The fees depend also on the environmental sensitivity of the region.
When effluents are discharged into municipal water treatment facilities, effluent limits are determined by agreement between the owner of a source of pollution and that of the treatment facility.

2.8.2 Inventory of Sources Generating Wastewater

According to the *Water Code* of Georgia, any enterprise can be defined as source of pollution if it discharges wastewater or other pollutants to the surface or ground waters, decreases quality of water resources and has a negative effect on the condition of water body beds and banks.

2.8.3 Record Keeping

Enterprises must keep records of wastewater discharged to the communal sewerage systems and ensure that the quality of wastewater complies with the state requirements.

2.9 Water Supply

2.9.1 Water Supply Regulations and Requirements

The main principles of use and protection of water resources in Georgia are stated in the *Water Code*, 1984. According to the Water Code, every organisation, enterprise or otherwise must obtain a license in order to be able to use water resources.

Enterprises consuming water resources are required to:

- undertake protection measures to ensure stable water quality;
- register all volumes of water intake, wastewater discharge and the amount of pollutants present in the effluent,
- provide easy access to the information for state bodies regulating surface water and ground water resources.

Enterprises which use water for production and abstract water directly from wells or surface water sources should follow the requirements for drinking water quality stated in the State Standard GOST 2874-82 *Drinking Water - hygienic requirements and quality control.*

2.10 Asbestos Management

There is no information available on requirements regarding asbestos management.

2.11 PCB Management

There is no information available on requirements regarding PCB management.

2.12 Solid Waste

2.12.1 Solid Waste Regulations and Requirements

The Law on *Environmental Protection* of Russian Federation, 1996, defines some general provisions concerning wastes. Local authorities, enterprises, institutions, organisations and individuals have to take effective measures to deactivate, process, utilise, store or dispose of industrial and domestic waste and comply with the existing ecological, sanitary and epidemiological standards and regulations. The Law establishes a permit procedure for handling waste. Environment agencies at the local level have rights to issue permits for collection, transportation, treatment and disposal of industrial, domestic and other wastes. The Law prohibits putting into operation any new or modified economic and technical project not equipped with the necessary devices for waste minimisation and re-use.

2.12.2 Inventory for Solid Wastes

Solid wastes could be classified as an industrial, domestic and agricultural, toxic and non-toxic. Toxic wastes are specified according to the degree of toxicity.

The enterprise should present to local branch of the Goscomecology application form for recording their wastes in the Waste Catalogue and information about every particular type of waste in two copies:

- origin of waste;
- aggregative state;
- chemistry of waste (percentage of all compounds) and methods of determination;
- toxicity of waste.

It is required to update those records once in three years. It is also required to maintain records about amount of wastes generated by enterprise and waste disposal site which received them.

2.12.3 Solid Waste Storage Practices

Solid wastes, which have not been utilised or transferred to landfill sites for treatment and disposal, require recording. Temporary storage of solid wastes on a company's site should be agreed with regional environmental protection committee.

2.12.4 Solid Waste Disposal Practices

Non-hazardous solid waste may be disposed of in ordinary landfill sites. The method of disposal is chosen depending on the aggregate state, solubility coefficient, toxicity index and other special characteristics of the substance.

2.12.5 Solid Waste Reduction/Reuse Efforts

As prevention and minimisation of industrial wastes during the production process are considered to be the most efficient way of solving problems, the legislation therefore concentrates on preventive measures, including introduction of resource-saving, low-waste

and non-waste technologies. The preventive measures are established by respective legislative acts.

The *Law on Environmental Protection* prescribes that waste minimisation and other modern technologies to prevent pollution of the environment shall be considered and envisaged during preparation of project feasibility studies. This Law does not allow operation of economic and technical projects not equipped with modern technologies, structures and devices to ensure the disposal, treatment and utilisation of harmful wastes, emission and discharges, complying or not with the maximum.

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
Contaminated Material	Entire track Alignment Especially also: Areas near spillage incidents Stopping points Maintenance and sidings facilities Chemical/oil and waste storage areas Asbestos or PCB containing material/equipment	**Identifying Potential Contaminated Material** Identify locations likely to be contaminated and types of contaminants likely to be present , This should be undertaken before sites works are undertaken. If an audit has been carried out for the area -this should provide the relevant information **Handling Material** Ensure that all on-site contractors handling contaminated material: • receive appropriate health and safety training; • aware of potential hazards associated with the exposure to contaminated land; • maintain appropriate personal hygiene practices following handling (e.g. no eating, smoking or drinking on site; washing prior to leaving site); • employ appropriate Personal Protective Equipment (e.g. disposable nitrile gloves, safety boots and overalls); and • aware of first aid procedures. Ensure that guidelines in the relevant method statement(s) are observed and that required risk assessments have been duly completed in accordance with statutory requirements. Documentation from these assessments should be available on site at all times. **Disposal of material** Material identified as contaminated should be stored and disposed of in such a way that it does not cause pollution to soil, surface or groundwaters. It should be disposed of in accordance with the regulations	Construction/track works -Safety Manager EHS manager responsible for the area/ facility		Refer to guidance on dealing with contaminated material. Additional resources may need to be made available to investigate extent and type of contamination present.
Storage of materials/wastes	Entire Alignment for track works	Store chemicals oils and wastes materials such that they do not escape and cause contamination of surrounding			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
	All areas used for storage of chemicals, oils and wastes	soil, groundwater and surface water courses via leaching or airborne transfer. It is recommended that excavated materials should be stockpiled on impermeable surfaces and covered to prevent spread of potential contamination prior to re-use or removal from site. Any wastewater discharged from spoil storage areas should be controlled to prevent contamination of groundwater and nearby surface water courses Any water that has come into contact with contaminated material shall not be discharged to public or private surface-water or foul sewers nor to watercourses. It shall be disposed of as directed by the local Water Authority, if necessary using temporary lagoons on site. **Asbestos/Asbestos Waste** If significant quantities of asbestos and/or asbestos waste is encountered, work should stop immediately and an assessment made of the asbestos/asbestos containing material. Large pieces of rigid material should not be broken or cut. Asbestos and asbestos-containing material should be wrapped intact in plastic sheeting or placed in a sealed container or covered skip awaiting disposal by a licensed contractor.			
Oil Spillage prevention		**Derailment** (example headings only) **Fire hazards** **Unloading /loading** **Storage and handling of oils used in maintenance activities**			
Emergency response Plan		**Co-ordination with Authorities** **Internal Emergency Response Unit**			
Waste		**Waste Management Directive**			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Target Date	Budget/resource implications/ Other comments
management		Waste management plan for each facility			
Energy Efficiency		Lighting Heating Resource use			
Procurement		Procurement policy to meet objectives relating to energy efficiency, waste management, safety etc			
Public Liaison		Communication links			
Liaison with authorities on operational activities		Communication links/meetings			

Table 1. Georgia Railways (SR): Example Framework for Environmental Management Plan

Subject: Environmental Issues (examples)

Issue	Site Location	Action	Individual(s) Responsible for Action	Responsible Authority	Legislation	Guidance/ Standards
			Section Manager / Resident Engineer Groundwater Protection Section Manager / Resident Engineer /		Waste Management Licensing Regulations 1994 (SI 1994 No. 1056) Environmental Protection Act 1990 (Sections 33 and 34) Environmental Protection (Duty of Care) Regulations 1991 Special Waste Regulations 1996 (SI 1996 No. 972) Special Waste (Amendment) Regulations 1996 (SI 1996 No. 2019) Special Waste (Amendment) Regulations 1997 (SI 1997 No. 251) Water Resources Act 1991 Classification, Packaging and Labelling of Dangerous Substances Regulations, 1984(a) Control of Asbestos at Work Regulations, 1987	Environmental Handbook for Building and Civil Engineering Projects: Construction Phase, CIRIA, Special Publication 98, 1994 Construction Practice Specification Part 1 GIBB Environmental - Phase II Environmental Assessment reports (Doc Ref. J96434B/63/B/30 003/P3 and J96434B/63/W/30 002/P3 DoE, Waste Management: The Duty of Care - A Code of Practice, 1991 Environment Agency Pollution Prevention Guidelines Control of Asbestos at Work - Approved Code of Practice, HSC (1988)

Table 1. Georgia Railways(SR): Example Framework for Environmental Management Plan

Subject: Institutional/Organisation Issues

EMP Issue	Action	Individual(s) Responsible for Action	Target Date	Budget/ Resource implications / Other comments
1. Setting up the EMP	Define job descriptions for and appoint staff to positions of: a) Corporate EHS manager b) Assistant EHS managers	DG/personnel		Salaries and overheads and support staff
	Draft and agree environmental policy	cEHS manager		as above
	Modify and expand draft framework management plan	a EHS managers		as above
	Develop reporting structure for EMP - which links EHS team into operational and administrative activities	cEHS manager and assistants		as above
	Undertake an environmental training needs assessment to identify key staff in terms of roles/influence and training needs	cEHS manager and assistants		as above
	Produce draft environment risk maps centrally with information available - these can form a basis for more detailed information generated by audits of specific areas/facilities.	EHS assistants		The Environmental Risk Maps should indicate the location of sensitive areas, receptors, rivers , aquifers protected areas, wetlands etc, the location of past spillages/incidents, locations of activities which could present a risk such as oil storage, handling facilities stopping places maintenance yards etc. This will need to be built up and added to over time as information is obtained from the audits . These maps will assist in determining priority areas for action and help plan responses to future incidents.
	Set up an audit programme covering all property and facilities and track	cEHS manager and assistants		An approximate budget can be assigned - likely to be most efficient to go to competitive tender, but require as part of Terms of Reference that railway staff are involved and trained as part of the audit process
	Set up database for legislation together with procedures for updating periodically - make this available to regions/facilities	cEHS manager and computer/IT department		Time to set up database and periodically to collect and input updates and make it available electronically or paper copy to all EHS managers Use legislative review in Volume II as a starting point
	Develop environmental objectives and targets which can be used to assess performance - refering to the corporate environmental policy, the audit results and analysis of compliance status	cEHS manager and assistants		These could include • obtaining 'ecological passports' for a specified number of facilities by a certain date • reducing the number of incidents each year • cleaning up specified areas of contaminated ground
	Compile environmental action plan and prioritise actions based on work needed to meet objectives and targets	DG/cEHS manager		Refer to Environmental risk plan, consultations with authorities, compliance analysis and business plan in drawing up priorities
	Develop corporate directives on key environmental management issues;	cEHS manager supported by		Many of these issues are closely related to reducing costs and improving efficiency of the railway operation as a whole. They

Table 1. Georgia Railways(SR): Example Framework for Environmental Management Plan

Subject: Institutional/Organisation Issues

EMP Issue	Action	Individual(s) Responsible for Action	Target Date	Budget/ Resource implications / Other comments
	oil spill prevention emergency response waste management energy efficiency	consultants		could provide significant savings in the long term. If consultants are commissioned to write these directives ensure that the EHS is closely involved and directs the output so that they address the particular management structure and operational activities of the railway.
2. **Developing an EMS to implement the EMP on a day to day basis throughout the organisation**	Develop simple operational procedures/guidance for staff undertaking or responsible for key tasks related to implementation of EMP. For instance these might be aimed at : • staff supervising loading and unloading activities • maintenance staff • construction staff	EHS assistants/ technical staff		All staff should be aware of their specific responsibilities with respect to environmental protection and should be reminded of these responsibilities through signs and brief guidance documents.
	Develop an overall programme for audit , review and modification of EMP and the environmental management system as a whole for the business plan period - 5 years	c EHS manager		
	Set up liaison meetings with authorities • on emergency response -preparedness and co-odination/communication • operational management issues relating to environment	c EHS manager		
	Develop a training programme for operational and administrative staff to implement EMS	c EHS manager supported by outside consultants		Train key staff to train others and training material to be customised to particular needs of staff

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