

## **The Way We Recruit and Train Road Engineers**

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### **Recruitment**

Proper human resource (HR) management has always been one of the most important issues in dealing with organisational management in the State Joint Stock Company (SJSC) Latvian State Roads (LSR). The aim of human resource (HR) management for several years already has been to provide LSR with competent and well-motivated staff. Due to the fact that majority of our personnel are road engineers or jobs alike with road engineering academic background, each year this aim becomes more and more difficult to achieve – the numbers of road engineers on the Latvian labour market are very limited due to economical and political reasons in the past years.

In Latvia due to economic stagnation with very low financing in the road industry and, consequently, low salaries for the people working in the road sector enterprises, in the beginning of 1990ies (1993, 1994) the job of a road engineer was not a prestigious one and road engineers were prepared in very small numbers - school graduates did not choose to study road engineering due to lack of potential for this profession at that specific time.

Our updated HR analysis shows that we might experience serious deficit of professionals and managers with academic background and work experience in road and bridge engineering in the nearest future.

Currently, from the total amount of 163 road, bridge, traffic safety engineers, road technicians, project managers, as well as middle and senior managers who are required to have higher education in roads engineering we have 13% vacancies of jobs with road engineering background. In the nearest future 15% of the job holders might be pensioned and other 13 % will soon reach their pensioning age.

In order to fulfil our aim in HR management in spite of the above situation— LSR has developed several strategies.

#### *1. Retention of staff*

From the total number of 270 employees 78% have higher education, 15 % - technical secondary, 7% - comprehensive secondary education.

Due to the fact that the general educational level of our staff is sufficiently high and also all our employees have received theoretical, practical and on the job training, as well as real job experience, they are very valuable for our company. In order that the valuable employees do not look for better job opportunities outside our company (we are aware of the fact that there is shortage of professional road engineers of approximately 200 in all companies of the road industry together) our company is developing attractive working conditions, system of rewards and social benefit package. Depending on their responsibilities our engineers are equipped with up-to-date office equipment, personal computers and other technical appliances. Due to the need of engineers and project managers to be flexible and mobile they are provided with mobile phones, office cars and they can choose between PCs or laptops. In order that the employees receive competitive salaries, our company participates in a salary surveys every year to find out the situation in the labour market and to adjust our salary levels accordingly.

Regular and appropriate training and development of our personnel also serves as a good motivator, highly important for retention of the qualified road specialists. Due to the fact that very small numbers of recently educated road and bridge engineers join our staff and there is very little opportunity to exchange theoretical and practical experience among them we pay a lot of attention to raise the practical and theoretical level of their professional education. Our engineers are provided opportunities to participate in seminars, conferences, training courses and road exhibitions locally and internationally. Once a year there is a possibility via our international contacts with the national road administrations in the Baltic and Nordic countries mainly, for them to go on technical visits with the aim of learning technical solutions outside our country. When they return they organise staff meetings to share the information they had acquired during the visit with their colleagues.

## *2. Redistribution of responsibilities and tasks*

The aim of this strategy is to use the available amount of road engineers as effectively as possible. I can mention two specific cases to exemplify this. In our Central Office, in Riga, we have introduced the position of project assistant whose responsibility is to help project managers regarding most of the office work and document preparation work, so that the project managers can spend more time on the projects with engineering solutions. Project assistants do not have the requirement of road engineering educational background.

Another example – in the regions where we cannot find any road engineers we employ road technicians or people with secondary technical educational background instead of employing road engineers and redistribute the responsibilities of the other two engineers. Depending on the scope of the regional unit, on average 3 people work in the unit, one of them being the manager and the other is an experienced engineer who can replace the manager when the need is. So the most important duties would be shared between the senior engineers and the road technician would play the part of the project assistant at the beginning, and at the same time he/she would be learning from the more senior colleagues to be ready to replace them when time comes.

## *3. Attraction of new staff members*

Up to year 2002 staff turnover has always been comparatively low – approximately 5 -10 persons annually, so recruiting was not something we exercised daily in HR. After the merger with SJSC “Road Research” and also due to the significant changes in our internal structure - four regional divisions were created in 2003, we had additionally 63 new employees. Last year we had the highest number of people leaving our company - 30 including 26 jobholders with the road engineers educational background left during the reorganisation of our company into two different companies due to the fact that some of the functions which our company carried out before, like: site supervision and designing of roads, it was not allowed to perform after reorganisation due to interest conflict. With great difficulties we managed to find 25 new people to work in 4 different regions of Latvia to replace the ones who left. There had never been problems with finding qualified office staff and specialists like: accountants, lawyers, economists, secretaries, etc., but to find qualified road, bridge and traffic safety engineers in Latvia you need to be very skilful and use all sorts of recruitment techniques. The most effective in our situation is “headhunting” which sometimes works and we as a company gain a specialist or two but other companies lose them at the same time and the problem in Latvia remains.

We started paying attention to the upcoming shortage of qualified road engineers already 9 years ago when we as a company formulated in our HR strategy that we shall support financially our employees who choose to study road and bridge engineering. Another thing we did – we tried to establish contacts with the Technical University, so that we are aware of the situation in preparing future road specialists – their numbers, the specific programmes and skills they are taught, etc. We did not succeed a lot due to the fact that at that time (beginning of 1990ies) all of the undergraduate students from the Building Faculty of the Riga Technical University followed the same programme and did not get any specialisation. In fact when it came to choosing the specialisation they would rather choose civil engineering, Civil engineers were paid a bit better at that time and perhaps the working conditions were a bit “cleaner”. Years went by. Although the situation with road financing had improved enormously and road engineers’ salaries had considerably increased, nothing much had changed on the labour market because there were just a few graduates with the road engineer’s qualification diploma. As Universities were not really interested in attracting students to road engineering studies we had to do something as we were desperately interested in getting more future engineers. We really put a lot of effort to convince our authorities, university and schoolchildren that it was both important that there were sufficient numbers of road engineers in Latvia and that those who chose road engineering for studies would have good job opportunities and regular and competitive salaries. The actions we took were the following:

- 1) Kept informing our Ministry of Transport about the shortage of road engineers in Latvia;
- 2) Supported the College of Transport Structures (3 years) at the Riga Technical University, providing the first level higher education and qualification of road and bridge construction site organisers;
- 3) Together with the Latvian Educational Foundation awarded scholarships and prizes for the winners of the competitions for best scientific works in the field of road, bridge and traffic engineering;
- 4) Organised introductory meetings on the premises of Latvian State Roads with the 1<sup>st</sup> year students of the Riga Technical University;
- 5) Organised “Shadow Days” for the schoolchildren from secondary schools of Latvia, in order that they learn more about the everyday work of road engineers / project managers and production engineers in the Road Laboratory;
- 6) Participated in Career Days for senior schoolchildren in different Latvian schools with the aim of popularisation of road engineer’s profession;
- 7) Organised free of charge visits for the schoolchildren to the Latvian Road Museum. Our aim was to show the children the historical and current significance of properly constructed and maintained roads;
- 8) One of the most significant measures was to convince our government that a larger amount of state subsidised student places are required for road and bridge engineers.

We did a lot during several years and felt that with our common efforts the situation with preparing future engineers had completely changed. We realised that not only the Ministry had understood the problem but also the University and our government were reacting in a positive way. The Ministry organised several activities for the schoolchildren, met with the educational Committee of the Saeima (Parliament of Latvia) and summoned press conferences to explain the situation to the society. In 2004 the situation in RTU regarding preparing road engineers had enormously improved. Alongside with academic undergraduate and postgraduate studies, the Building Faculty was offering professional undergraduate and postgraduate studies for road and bridge engineers. There is also a

possibility for those graduating from the College to continue their studies for the professional Bachelor of Science (BSc) degree, which take only 1,5 years. So now there is a real hope for us and other companies from the road industry to fill our current road engineers' vacancies after year 2009. Up till then we shall have to survive with the above interim solutions.

## **Training and Development**

In order to provide our organisation with really competent and competitive workforce LSR has developed a regular training system. Regular and appropriate training and development of our personnel serves as a good motivator, highly important for retention of the qualified road specialists.

Each year we specify the main directions for our training by drafting a Programme for Development and Motivation, and we set aside our training budget based on the scope of the programme. Once a year we organise development discussions with our staff to find out their training needs and development plans.

Based on the training needs analysis we draft our annual training plan and organise the training accordingly. Depending on the need we organise training in different ways:

- Conduct internal company seminars for specific job groups, like: regional managers, project managers, etc. Speakers at these seminars are our directors, heads of departments and relevant specialists;
- Send individuals to open courses offered by the Latvian training companies;
- In case there is a group of employees with a similar training need, we invite a trainer and together with him/her develop the training programme suitable just for our people;
- Send individual experts and specialists to international seminars, conferences and congresses (depending on the availability of funds);
- Organise technical excursions mainly for road, bridge and traffic engineers to our neighbouring Baltic and Nordic countries.

The most difficult training to find locally is the professional skills and development training for road engineers. Riga Technical University (RTU) is busy running academic and professional BSc, MSc and PhD programmes, as well as granting road engineers qualifications. They have recently opened also a three years college programme granting the first level higher educational diploma in the speciality of transport structures, opened in the Building Faculty of the Riga Technical University. The Union of Building Engineers is granting certificates to the engineers who meet the requirements, they provide only short courses before the exams. There is no training institution in Latvia taking care of the continuing education for road, bridge and traffic engineers. Each of the companies in the road industry has to manage this issue with their own capacities. Each of the companies has to employ or hire people who can organize training courses for the engineers in their companies. These people in their turn have to look for suitable lecturers, design appropriate programmes, hire the training rooms, etc. This is not a very economic approach for a small and not very rich country like Latvia is.

And now some words about how we cope with training of engineers in the Latvian State Roads, former Latvian Road Administration. From the total number of 270 employees the number of jobs with road, bridge and traffic engineers' is 163 out of whom only 24 have received their education within 10 years ago, the others have received their academic education much earlier. We used to have one training manager to organize all the training

required for our employees and also some training courses for other road companies. The amount of training seminars was not sufficient and the training needs were not really collected from the companies. After the reorganisation the responsibilities of the HR department were revised and decision made to support establishing a training centre, providing continuous educational programmes for road engineers working in different companies in the whole road sector in Latvia, outside our company.

In the current situation when we lack young road engineers who have received modern professional education we feel that something has to be done in order to upgrade our engineers' knowledge.

Our engineers have received their higher education at the Riga Technical University, majority of them 20-30 years ago or even earlier when the situation was completely different in many aspects. We lived in a socialist union of states, under planned economy, governed by 5 year plans, and the situation on the roads was much different from what it is today, when we have joined European Union and we are experiencing market economy relations. The number of cars has enormously increased, as well as their brands, and the vehicle mileage is continuing to grow. The requirements of the road users for larger efficiency, quality, safety and comfort on the road network are increasing. Unfortunately, the financing for the management of the road network has not increased, and that means that the engineers have to find solutions for getting more value for less money. That could also involve increasing of the competence of engineers, so that modern economic engineering solutions could be found in our country.

Latest inquiries among our engineers show that they think it is important to receive good training now and then and especially worthwhile it is to travel to the countries where they can learn the practical things, participate at international seminars and conferences where they can learn about the new technologies and methods. They have also expressed a wish to learn from the local authorities in Latvia about the legislation and standards.

The professional training for road engineers has always been hard to find, so we have been using all the possibilities we could find. Most of those possibilities similarly like in Lithuania and Estonia came first from our individual contacts with the Road Administrations of the Nordic countries, like: Finnish Road Administration, Swedish National Road Administration, Norwegian Public Roads Administration, Danish Road Directorate. Later, when T2 (Technology transfer from the USA) was set up, a lot of assistance came from the USA via Finnish Road Administration and IHME (Institute for Highway and Maritime Education in Finland) that used to provide and is still organizing useful and interesting courses for our road specialists.

A lot of activities before and currently are organized with the help and assistance from the Baltic Road Association and Nordic Road association, and a lot of information about topical seminars, conferences and congresses reach us as PIARC (Road Congress Association) and IRF (International Road Federation) members.

When we realized that there is lack of road engineers on the labour market and that the educational level of the current engineers is not sufficient due to the new circumstances under which they have to operate, by means of our international contacts we found out that the same kind of problem is topical for the road administrations in Estonia and to some degree to Lithuania as well. We discussed it first with our cooperation partners in Finland who thought it might be useful to start a common training project for the road engineers of the Baltic countries. One of the most urgent problems to solve would be the financial aspect. The idea was to try to apply for the EU Social Fund financing.

At that time, years 2003-2004, there was little information on the provisions of EU social funding and we felt we needed more advice, sharing of information and experience on both funding and content and organization of such a programme. We approached the Baltic Road Association with a request to organize the 2<sup>nd</sup> seminar discussing the education and training for road engineers in the Baltic and Nordic countries. When Nordic Road Association agreed to provide speakers it was decided that the seminar will take part in Riga, at the end of 2004 under the headline “Continuing Education for the Baltic and Nordic Road, Bridge and Traffic Engineers”. The main topics we discussed during the seminar were the following:

- Why there is a special need for qualified road, bridge and traffic engineers in the Baltic countries?
- What skills and knowledge the engineers having received their diplomas/degrees back in 1970ies – 1980ies – 1990ies lack for working in the current situation?
- Sharing experience on continuing education programmes:
  - responsible institutions for organising this type of education;
  - cooperation between the employers and the training institution;
  - content of such programmes; who determines the content?
  - level (certificate/professional degree/diploma?) and duration of the programme;
  - teaching/training staff- where do they come from, their background;
  - financing for such programmes (amount; donors);

The HR and training people, as well as the teachers and lecturers present learned a lot during those two days. They listened to 17 reports delivered by speakers from 6 countries. All the reports were about educating and training of road, bridge and traffic engineers working both - in private and public companies. The educating of engineers was split in university programmes and professional courses. The conclusion was that the educational programmes were quite similar and there were some learning points that universities could learn from each other and use in their work.

There were a number of reports from companies and training institutions providing professional training courses for the road industry. It was interesting to learn that in several countries (e.g. Lithuania, Estonia, Finland) such courses were provided by the training institutions, by the companies themselves and by the Universities (detached courses in Lund University). There were examples of good cooperation between the training institutions, universities, professional associations, schools and companies in setting the content and quality requirements, working out training strategies annually so that the employers receive the training their staff needs. An interesting idea was brought from Finland where all the transportation industry is treated as a whole from the point of view of defining the strategy for HR development in all the sectors of transportation – roads, railways, ports and air service.

Another good learning point was about the new forms and technologies for learning for people who want to choose the time, place and tempo of learning – open distance learning and e-learning as cases were discussed. The final interesting topic for discussion was the “money issue”. Just before the seminar participants came together to work in the ‘national groups’ to formulate possible models of continuing education programmes for road, bridge and traffic engineers, it was essential to understand how to attract funds for setting up a good training curricula, get the best trainers, provide specialisation courses locally or abroad. One of the possible ways of attracting funds for training of engineers being to apply to EU structural fund money, representatives from the Agency for Vocational

Education Development of Latvia were invited to share their knowledge and opinion of whether and how the EU funding could be attracted for the above project.

Afterwards, when it was understood from the final report that according to priorities for EU Social fund allocation in Latvia it is possible to apply for financing for setting up continuous educational programmes for industry branches essential to Latvian economy, the participants worked together in national groups to formulate possible models of continuing education models.

The Latvian national group was represented by: SJSC Latvian State Roads, Latvian Road Association, Latvian Road Builders Association, Riga Technical University, 4 large state joint stock road maintenance companies. In the result of discussions it was agreed that:

- 1) SJSC Latvian State Roads, Latvian Road Association, Latvian Road Builders Association and Riga Technical University would set up Educational Council of the road industry (ECRI), the aim of which would be - through cooperation among all the large and small companies in the industry to collect the training themes for continuing education programme, which can be change in case there is a change in applied technologies, calculation and designing software, etc.
- 2) The training Centre should be located in the Building Faculty of Building of the Riga Technical University (RTU), in the auspices of the Road and Bridge Department;
- 3) The training courses should involve theoretical and practical training. The practical training should be organised together with the concerned companies, outside the premises of the RTU, so that the training process is best suited for the professional needs.
- 4) Content of the programme. The continuing education for road engineers should include courses of several levels and the MSc professional studies programme "Transport Structures". The themes for the shorter and longer courses were not specified yet. This would be the responsibility of the Council to define the course themes together with all the road companies.
- 5) Course levels and duration. There would be several levels of courses.
  - The first level, self-teaching level would be the broadest. It is broadly used already now, and if specific training materials were prepared it would be possible to provide e-learning opportunities for the students. This level of the courses would not be assessed formally.
  - Second level courses are 1 to 2 day courses devoted to a specific topical issue. The participants would receive certificates.
  - Third level courses may be up to 2 weeks long, organised in several blocks, not longer than 2 to 3 days each. Participants would receive a certificate with their knowledge assessment. The content of themes would be much broader than that of the short courses.
  - The fourth and highest level would be the MSc professional studies at the RTU. In case of successful studies the professional MSc degree in transport structures would be conferred and the post-graduate student would be eligible for studies in the PhD study programme.
- 6) The teachers/trainers would be selected from the leading road specialists from Latvia and also from recognised teachers from Latvian educational institutions. In case it would not possible to find local teachers, the Council may invite foreign experts familiar with Latvian circumstances.
- 7) Financing. Road industry companies interested in setting up a regular training basis for their employees would finance the establishment of the new training system. Additional funding should be searched by applying to the EU Social Fund financing. When the system is established, financing would come from the course fees and donations from institutions, international foundations, etc.

During year 2005 the Educational Council of the road industry has been set up, the Training Centre opened at the RTU, programmes for seven short courses have been prepared and confirmed, four of them have already been conducted. ECRI is summoned once per month regularly and is dealing with all issues relating to the further education of Latvian road engineers and related jobs. ECRI is open to new ideas, solutions, exchanges of experts, etc. from our international community. One of the bottlenecks in the higher educational system that we find is the lack of training programmes for traffic safety engineers in Latvia.