THE QUERY PROJECT

Developing Guidelines for a Best Practice Qualification of Accident Analysts

Michael Weber
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Michael Weber
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The Author

Michael Weber holds a degree in Mechanical Engineering. He began working in the field of forensic reconstruction and research in 1984. In the 22 years since, he has prepared more than 6000 expert reports. In the year 2000, he set up a private institute for accident reconstruction in Hamburg, Germany, where he and his team work exclusively for the courts.

He has also written extensively on reconstruction-related matters. The standard work 'Accident Reconstruction,' published in 2006, was co-authored by him. Michael is also the author and editor of a standard work on the forensic investigation of insurance fraud, the author of two standard references for lawyers concerning accident reconstruction, and co-author of two books on whiplash injuries. Since 1986, he has published more than 40 scientific papers on accident-related issues. In 1997, the study 'Do whiplash injuries occur in low speed rear impacts?' was awarded the AcroMed Prize by the European Spine Society (first published in Spine No. 6, 1997).

In 2001, Michael took up chairmanship of the EVU, with the aim of opening the association to all European countries and of installing an international network of accident reconstructionists. Today, the EVU has grown to have over 500 members across Europe.
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Preface

Road accidents that have already occurred very rarely gain any official interest. Research work is generally focused on accident prevention, with this report being one of the rare exceptions. While it is desirable to minimise the accident rate, we will always have to deal with the question of how to arrive at a just legal settlement of matters, both in regard to public prosecution and civil litigation.

In this regard, the accident reconstructionist (a term coined during the project) plays a pivotal role. With the help of the QUERY project, we will hopefully be able to reach a situation in which every European citizen involved in an accident in any European country can rely on a certain standard of scientific expertise with which the technical investigation is conducted.

The reconstructionists who took part in the QUERY project are a promising start in this regard. Without their commitment and enthusiasm, the project would have never been completed in such a short period of time.

Of course, technical investigation can only be as good as the material it is based on. Computer simulations cannot substitute the professional securing of evidence right at the accident spot. In this regard, the UK and the Netherlands have arrived at a professional level that most other countries lack at present. Evidentially, professional training of reconstructionists and of accident investigators are two sides of the same coin.

I really would like this book to be read by people concerned with the legal settlement of vehicular accidents. The reports on the status quo in all European countries offer concise access to information that has never been presented in such condensed form before. Promisingly, it reveals that the ways in which matters are handled already have a great deal in common throughout Europe. I hope that the proposals derived from this project will encourage still greater harmonisation.

Cologne, June 2006

Wolfgang Hugemann,
Editor of the standard work ‘Accident Reconstruction’
1. Proposal for European Guidelines in Accident Reconstruction
I Accident Scene Examination vs. Accident Reconstruction

Concerning vehicular accidents, a distinction should be made between two types of work:

- collection of evidence and data at the scene of an accident, including measurements (e.g. deceleration), preservation of ephemeral evidence and interviewing
- accident reconstruction, i.e. the use of scientific methods for the purpose of drawing conclusions from the evidence gathered at the scene of an accident

In most European countries, the first type of work is carried out by police officers, preferably with specialist training. We suggest calling such a specially trained person accident scene examiner.

The second type of work should be performed by persons with an academic qualification. We suggest calling this type of work accident reconstruction, and distinguishing the according profession clearly from that of the first named group.

In the following, we are using the terms reconstructionist or comparable terms in the local language to describe persons carrying out such work. The use of terms like ‘technical expert’ or ‘vehicular expert’ should be avoided as they imply ambiguities.

The Netherlands and the UK do not agree with the requirement of academic qualification:

In these countries, where a system of accident scene data collection and analysis by the police authorities is in place, suitable training and education should be provided.

If and when an investigation is particularly complex, or it involves the application of physical laws or complex mathematics which are beyond the experience of the investigating officer, the evidence must be validated by an appropriate expert (whether a police officer or otherwise) who has the necessary knowledge and experience. In such cases, balance must be drawn between those who possess academic qualifications and those with essential practical experience.

II Protected Title for Accident Reconstructionists

In most European countries, it is most common to use only one (‘joint’) technical expert in a trial, while in some countries there are usually two experts, one for each of the litigant parties. The use of only one expert in a trial makes severe demands on his/her qualifications and moral integrity; litigation is based on the conclusions drawn by the reconstructionist which a lay person cannot check in detail.

To guarantee qualification and moral integrity, a system of quality control needs to be established. Persons who are certified by this quality control system should be assigned a protected title (and preferably a protected stamp or seal along with it), which would enable lay persons to distinguish them from self-proclaimed experts.

This system would be comparable to the handling of titles in other professions, such as medical doctors and lawyers.

III Accident Scene Examination

Gathering evidence at the scene of a severe accident is a task which carries a lot of responsibility, and thus calls for specially trained personnel. It usually cannot be carried out by ordinary police officers.

In general, such an accident scene examiner does not need an academic qualification, as the gathering of evidence can, after suitable training, rely largely on a ready-made list of guidelines and requirements.

In the case of a complex accident, a (partial) reconstruction of the accident at the scene may, however, help in the gathering of the evidence, and therefore call for the attendance of a reconstructionist.

IV Qualification of the Accident Reconstructionist

The reconstruction of an accident (as defined above) frequently calls for profound knowledge of physical and technical principles, which generally can only be acquired by technical studies. A university degree in mechanical engineering, physics or a comparable subject is therefore a prerequisite for becoming a reconstructionist.

However, a university degree alone is not sufficient for carrying out this type of work. Special practical and theoretical knowledge in the field is required.

Regarding theoretical qualification, post-graduate studies are a possible approach, and would be preferable to training on the job alone. On the other hand, practical knowledge can only be acquired by practical work in the field, of which no less than 3 years are necessary. Furthermore, reconstructionists should at least have a working knowledge of the judicial system of the country they practice in, including the codes of procedure and the rules of evidence.

Reconstructionists need to possess at least a class B driver’s licence. Possession of licences in classes A and C1-CE is recommended. The possession of a licence in a particular class does generally not guarantee sufficient driving experience in that class. Driving experience is necessary, however, to judge the behaviour of a particular vehicle and of the driver.

V Certification Process

Candidates who wish to receive certification as reconstructionists should have to pass an examination in order to prove their specialist knowledge in the field of accident reconstruction.

Such examinations should be carried out by a limited number of accredited institutions. It would be essential that training and examination are not performed by one and the same institution if the outcome of the examination conflicts with financial interests.

The certification of a reconstructionist should be time-limited, and should have to be renewed approximately once every five years. In drastic cases, the institution which carried out the certification should be allowed to withdraw it. In such an event, the certified reconstructionist should be obliged to take part in further training in order to remain certified.
VI Technical knowledge in the field of Accident Reconstruction

Specialist knowledge in the field of accident reconstruction should comprise:
- collision mechanics
- time-distance calculations
- basic knowledge of crashworthiness
- technical aspects of injury biomechanics and injury mechanics
- basic knowledge of human factors
- vehicle technology, especially concerning steering and braking systems as well as vehicle dynamics
- basic knowledge of simulation techniques
- basic knowledge of repair technologies and repair cost calculation
- technical proof of insurance fraud
- digital photography and digital imaging techniques (correction/manipulation of images)
- road infrastructure
- basics of criminalistics and interpretation of evidence
- as well as all knowledge required to carry out accident scene examination

VII Remuneration

The remuneration of the reconstructionist when hired by the court should be adequate, i.e. comparable to that obtained on the free market.

VIII Reconstructionist vs. Expert for Repair Cost Estimation

In many European countries, the profession of repair costs estimation is not clearly distinguished from that of accident reconstruction. This situation is facilitated by occupational titles such as ‘vehicular expert’.

While in repair cost estimation, judgement is required on the ‘final state’ (the damaged vehicle as it is), in accident reconstruction it is usually necessary to determine dynamic processes (for instance the approach of the vehicles to the collision point). Apart from all the additional knowledge of various fields which the practice of accident reconstruction requires, this dynamic approach is what distinguishes it from other fields of vehicular expertise.

Thus, an expert for repair costs estimation does not need to possess any knowledge of accident reconstruction. While an accident reconstructionist does not need any knowledge of repair cost estimation for the actual reconstruction of an accident, it might be useful if reconstructionists had a basic knowledge of repair cost estimation, as the need for a judgement on a particular estimation can arise at times.
2. The QUERY Project –
Developing Guidelines for a ‘Best Practice’
Qualification of Accident Analysts
2.1 INTRODUCTION

2.1.1 THE BACKGROUND TO QUERY

Every year, approximately 40,000 people are killed on the roads of the European Union, and 1.5 million people are injured as a consequence of road traffic accidents. After a traffic accident, the question arises as to the cause of the accident and how it could have been avoided. In most cases, the answer to this can only be supplied by a suitably qualified accident analyst, who reconstructs the unfolding of the accident by means of the secured evidence material. Random sample surveys have shown that the professional profile of this expert is defined very differently in the various member and accession states of the EU. As in other professional areas, it would be advantageous if this professional field could be harmonised throughout Europe.

The knowledge of the exact unfolding of an accident is an irrevocable prerequisite for the reactions to an accident, as listed in the following passages:

1. Prevention

In traffic-related court cases, criminal investigation presupposes that the unfolding of an accident is reconstructed and possible fault of the participants is proven. A preventative effect is achieved by prosecuting the culpable party.

2. Just distribution of civil law costs

In most European legal systems, the material costs are paid by the insurer of the party who caused the accident. In a civil case, a party’s insurer is not liable in the event that unavoidability is proven. For a fair distribution of costs, it is necessary to determine to which extent each party is to blame. This can only be achieved by systematically reconstructing the accident.

3. Compensation

Generally, the party who caused the accident is the one at fault. In this case, the victim of a traffic accident is also entitled to immaterial damages (‘compensation’). The extent of fault can be determined by the reconstruction of an accident.

4. Improvement of vehicle safety on the road

The knowledge of the unfolding of an accident gained through a reconstruction can also be put to use in the form of practical recommendations as to how future accidents can be avoided (active safety), or at least how the consequences of an accident can be moderated (passive safety). An accident reconstruction expert can convert the experience gained from actual accidents, as well as from accident experiments, into technical recommendations which aid the improvement of accident prevention and protection.

2.1.2 THE PURPOSE OF THE QUERY RESEARCH PROJECT

In all of the European states, there are highly qualified specialists who can reconstruct the circumstances of an accident by means of analysing the accident evidence. There have always been differences between the individual countries with regard to the regulations on the education and training of accident analysts, on admittance to the courts and to other institutions, as well as on the position of the expert in court. Before the QUERY research project, no inquiries had ever been carried out into the extent of these differences, nor into which common areas had developed.

In 2004, the European Association for Accident Research and Analysis (EVU) set itself the target to firstly establish a European-wide accident reconstructionist network, and secondly to investigate how the professional profile of specialists in accident reconstruction is integrated into the different legal systems. Thus the ‘QUERY’ Project, Developing Guidelines for a ‘Best Practice’ Qualification of Accident Analysts, was born.

The general idea for such research had been in existence for much longer; however, the EVU’s funds alone did not allow for such a large project to be carried out. When the Directorate General for Energy and Transport (DG-TREN) announced funding for research in this field, the EVU proposed the QUERY Project, and was granted funding of 50% of the costs. The remainder was made up of a considerable amount of the EVU’s own resources, sponsorship from the German Road Traffic Safety Council (DVR), as well as smaller contributions from several reconstruction-related organizations and individuals.
2.1.3 THE RECONSTRUCTIONIST WITHIN THE BROADER FIELD OF ACCIDENT INVESTIGATION

Accident analysis, or reconstruction, is a relatively new professional specialisation, which has developed over the last few decades. It involves the reconstruction of road traffic accidents by way of forensics.

The accident reconstructionist, in most countries academically trained as an engineer or physicist, is commissioned by courts of law or by disputing parties – for example insurance companies – to reconstruct the unfolding of an accident on the basis of objective evidence. This professional branch exists in all European countries, but in many, it is generally only rarely made use of by the courts. In most of Europe, the reconstructionist is usually hired by the court as an independent expert.

This professional specialisation has had parallel development in the US and the UK. There, in contrast to other European countries, a reconstructionist is not commissioned by the court, but by the disputing parties. Both parties have their own expert, who will then exchange their frequently differing points of view before the court.

Accident researchers are less concerned with the reconstruction of traffic accidents than with the actual unfolding of an accident. They are mainly employed at research institutions, such as development departments of the automobile industry or universities. Their goal is to improve the passive or active safety of vehicles. It is important for their work that they can refer to the findings of accident reconstructionists. At the same time, accident reconstructionists, who are more active in a practical capacity, can profit from the theoretical research results of the accident researcher.

There are many other experts in the field of accident investigation. A very large group consists of specialists concerned with damage calculation, i.e. with determining the extent of the damage caused. These are either independent claims adjustors, or damage assessors employed in the insurance industry. The term loss adjustor is also used at times.

Another group of vehicle specialists are the experts in vehicle examination. They are mainly employed in the field of technical vehicle monitoring.

Each of the above professional fields requires a particular expertise. With the development of such specialisations, a clear distinction between the professional profiles of the various experts working in the broader realm of accident investigation has become necessary.

One of the aims of the QUERY project was therefore an actual definition of the various professional profiles, so as to make a distinction between these possible even for the lay person.

2.1.4 THE EUROPEAN DIMENSION OF THE RESEARCH

A reliable and accurate reconstruction of road traffic accidents is only possible if and when the accident reconstructionist possesses the greatest possible specialist knowledge. From the experience gathered through their work, recommendations on both vehicle and road safety can be developed by reconstructionists, which may be converted into directives or laws, either on an EU or on a national level.

An increasing number of accidents involving citizens of other member states can be expected as a result of the expanding internationalisation of traffic. It is reassuring for both the ‘paying insurance’ and for the citizen to know that an accident analysis is carried out by a qualified reconstructionist who fulfils criteria which apply throughout the EU. Such criteria also strengthen legal security within Europe.

This does not only apply to traffic accidents, but also to the monitoring of traffic offences. In some countries, questionable measuring methods are still used, which can lead to incorrect measurements. In a large number of countries, accident reconstruction experts are frequently consulted to verify these measurements to the courts.

Accident analysts take a great interest in the work of their professional colleagues in the other EU member states and further afield. This is visible, for example, in the numbers attending the annual conferences held by the EVU. The foreign departments of insurance companies attach great importance to accidents in other countries being dealt with correctly and comprehensibly. They are therefore very interested in publications on this subject. Lawyers who deal with damages abroad need qualified experts on location.

If a standardised professional profile of the specialist in accident reconstruction was successfully set down in writing, and a European certification was achieved, a quality assurance would be available to any of the groups requiring the services of a reconstruction expert, and a register of qualified experts throughout the entire EU could be made available.
2.1.5 THE EVU – BRINGING TOGETHER ACCIDENT ANALYSTS ACROSS EUROPE

2.1.5.1 The History of the EVU

The European Association for Accident Research and Analysis (EVU) was founded in 1991 by the German accident analyst Dr. Heinz Burg, to improve the standard of accident analysis and accident research.

The EVU’s first conference was held in Vienna in 1992. Their annual conferences have since developed into an important educational event for accident analysts throughout Europe. The association was managed directly from its headquarters in Wiesbaden, Germany, until the year 2000, when it was restructured due to the constantly growing number of members. The EVU now consists of an umbrella association (‘the EVU’) with headquarters in Hamburg, Germany, as well as of individual country groups. Any European country may establish such a Country Group, and many EU countries, as well as Switzerland, have already done so. At the end of 2005, the EVU counted approximately 500 members from 24 countries.

2.1.5.2 The Association’s Aims and Objectives

The EVU aims to promote the improvement of accident research and of the methodology of accident analysis, as well as to contribute to an increased legal security in the process. Within the realms of its possibilities, the EVU further aims to improve traffic safety by publishing information on the unfolding of accidents, and by using the knowledge gained from the unfolding of actual accidents to derive concepts for the improvement of both active and passive safety. The EVU’s complete aims and objectives can be found in the association’s statute, which is printed in full in appendix VIII.

The EVU carries out its own research or takes part in suitable projects. The results are primarily made available to its members. Through publications and congresses, they are also passed on to the public.

Members appointed by the EVU contribute to national and international expert panels. The EVU makes every effort to support international cooperation for the further development of science and research in the field of road traffic safety and accident research. The association is also committed to the harmonisation of training and of the appointment of experts.

It works together with the authorising and certifying bodies at national level, and promotes the European standardisation of the reconstructionist’s professional profile. The EVU Country Groups attend to the national interests of the profession and are represented on the corresponding boards.

The association holds an ordinary members’ meeting every year, which always takes place in the framework of the EVU annual conference, and is held in a different member country each year. The EVU also tries to foster ongoing training for reconstructionists by examining international educational events and recommending suitable ones.

2.1.5.3 The EVU as a Hub for Knowledge Exchange

Achieving a high standard of education depends, to a large degree, on the exchange of information and the sharing of knowledge. While in the EVU’s early days, the association would have liked to use a European members’ journal to such end, this was beyond its financial means at the time.

Technological development since has of course paved the way for a much more accessible platform. Today, an extensive database on the EVU’s website, www.evuonline.org, is available to its members.

The dynamically constructed ‘European knowledge base’ went online at the beginning of 2004. All information, including a large amount of downloadable documents, is stored in an Access database with comprehensive search and research possibilities. Any new documents can be uploaded by the members themselves. The easy-to-use structure only requires a few clicks of the mouse. For the upload, editorial rights to the website are necessary, to ensure that all information is vetted before uploading. Any new material is therefore first sent to one of the members who possess editorial rights.

The following areas are covered in the knowledge base:

- Comprehensive data collection with specialist articles, books, worksheets, programs and Excel sheets
- Experiment database with differentiated research possibilities
- Calendar of events for specialist conferences and seminars
- Collection of subject-related links

On the publicly accessible part of the site, address lists of experts and organisations are available. These are very useful tools for finding a suitable reconstructionist at a specific accident location.

The site is currently available in German and English. The knowledge base still contains many German-only publications. Over time, the EVU will be making the entire knowledge base available in the English language as well.
2.2 Progression

2.2.1 QUERY PHASE I

2.2.1.1 Finding Project Partners

The first step in the project was the search for competent contact persons from all EU countries. Partners in 26 countries were found. Apart from all EU countries bar Malta, Switzerland and Norway also offered to participate.

Switzerland – where an EVU Country Group is also in existence – was a rather significant partner, not only because of its central European location, but also because all German-speaking countries have been important both to each other and to much of Eastern Europe with regard to knowledge exchange.

With Norway participating, it was also possible to include the whole of Scandinavia in this research.

We enquired as to the current situation in the various countries with regards to the following:
- reconstructionists’ qualifications
- certification or accreditation methods
- competences required for such certification
- the reconstructionist’s position in court
- reconstructionists’ working conditions
- their working areas
- associations, institutions and activities

This information, gathered in the Country Status Reports from all the participating countries, is printed in full in chapter 3.1. While no partner was available in Malta to participate in the QUERY project, contact with a Maltese expert has since been made. Largely due to the small size of the country (an average of 24 fatal accidents occur there per year), the profession of reconstruction expert is not represented there as such, with the above expert the only one of his kind. Thus, no court expert lists are in place, nor were official authorities able to aid in the search for a suitable partner.

All communication was done through both English and German, to cover the foreign languages spoken in both the Western and Eastern parts of Europe. Any material made available by the participants was translated into the respective languages, so as to make it available to all project partners.

The reports had been submitted either in the local language or in English or German. Most required both clarification and correction. While language difficulties were at play, this was also due to two other reasons: Firstly, the differing systems in the various countries often have different authorities in place, for which a specific nomenclature - not necessarily existent in other languages - is used. Secondly, both the nomenclature and the responsibilities of the various experts in the broader field of accident investigation also vary between countries.

The participants were then invited to the first workshop of the QUERY project, held in Budapest on November 4th, 2004.

2.2.1.2 Conference QUERY Phase I, Budapest

The QUERY Phase I workshop was attended by experts from virtually all European countries (for detailed information, see appendix I – List of attendants).

To introduce the participants to the various concepts of the professional profile across Europe, nine representative countries were chosen to give an overview of their respective situation.

While the profession does exist in all European countries, it became apparent that the countries to the West of Europe (Spain, Portugal, France and Italy), as well as the Scandinavian countries, make much less use of experts in the reconstruction of road traffic accidents than the Eastern European and the German-speaking countries do. In the West of Europe, experts are mainly consulted in penal cases. Civil litigation is relatively uncommon there, as insurance companies try to avoid taking disputes to court. In comparison, reconstructionists in Germany, Austria and Switzerland are frequently consulted in civil litigation, to ensure a fair distribution of costs.

In these countries, vehicle owners often possess a traffic-related legal expenses insurance. Thus, in a civil case, the plaintiff carries no risk of having to bear any of the cost. As a consequence, in many cases the decision to go to court is neither based on the costs related to the case, nor on the value of the claim. In countries where such insurance is available, a considerable part of a reconstructionist’s work relates to such claims. This sector of the insurance industry is growing steadily, and is most likely to expand to other parts of Europe.

The British legal system, similar to the American and Australian models, differs from most European ones in that virtually no joint experts are used in court. Instead, two or more experts are hired directly by the litigant parties, whose opinions compete against each other. The other countries mostly differentiate between a joint ‘court expert’ or ‘expert witness’, and a private one. The position of a court-hired expert is generally much stronger than that of a private one. While a list or panel of court experts is available to the courts in most countries, in many cases the criteria for registration on such a list are unclear.

The countries to the East of Europe have a surprisingly high standard in accident reconstruction, in most cases significantly higher than that in Western Europe. The remuneration court experts receive is, however, very low there (between €3 and €11 per hour). The expert needs to take on private clients to make ends meet.

With the many differences across Europe in mind, the minimum requirements necessary for the qualification and certification / accreditation of reconstructionists were discussed.

The vast majority of workshop participants agreed that an academic education with a degree in engineering or a similar discipline had to be a minimum requirement for the reconstructionist’s profession. Where the degree does not include the basics of accident reconstruction or vehicle technology, postgraduate studies were considered necessary.

The Netherlands and Great Britain, however, have a different system of accident investigation in place, which is chiefly carried out by the police. These two countries therefore expressed concern over a guideline regarding minimum qualification requirements which may give the - non-academically qualified - police no authority whatsoever over carrying out accident analyses.

The participants also agreed that certification as a court expert should additionally require several years of working experience in a reconstructionist’s office. This certification should not be valid for life, but limited to a period of two to five years. The moral integrity of the applicant should also be examined, as well as monitored after certification has been granted.
The workshop concluded with an initial framework of necessary ‘best practise’ guidelines being drawn up. It was decided that the following issues would need to be included in the guidelines:

- minimum requirements regarding qualification of experts
- required postgraduate studies
- required working experience in the profession
- further necessary requirements, such as driver’s licences
- criteria for accreditation / acceptance on a panel of court-appointed experts
- quality assurance by means of an official seal for the European reconstructionist
- composition of an expert commission for the accreditation of reconstructionists
- catalogue of examination requirements for accreditation
- minimum requirements regarding the expert’s moral integrity
- temporal limitation of the accreditation’s validity

2.2.1.3 Achievements of QUERY Phase I

In Phase I of the project, partners were found and all relevant information was gathered. The workshop, which concluded Phase I of the project, brought together accident reconstructionists from virtually all EU countries for the first time. This made a framework of necessary ‘best practice’ guidelines possible. Also, it helped define areas in which more in-depth information was required, which was to be gathered in the second phase of the project by means of a standardised questionnaire.

The Country Status Reports were published in an interim report in mid-2005.

The QUERY participants from the Western parts of Europe, from Scandinavia and the UK had expressed disappointment at the lack of exchange with Central and Eastern Europe. The EVU’s membership base has traditionally come from the German-speaking countries and from Eastern Europe. Hence, the EVU’s main language of communication had always been German.

As the EVU is the only pan-European organisation of its kind, it has now switched to English as its main language of communication, and is publishing all material in both English and German.

Furthermore, another large step toward an increased pan-European exchange of knowledge was taken as a direct result of the QUERY Phase I workshop: an email discussion forum for European reconstructionists, accessible at http://uk.groups.yahoo.com/group/eurec, was set up shortly afterwards.

2.2.2 QUERY PHASE II

2.2.2.1 The Questionnaire – Development and Evaluation

In the second phase of the QUERY project, an extensive standardised questionnaire was developed to provide further detailed information as well as opinions on the status of the accident analyst.

Detailed questions on all points addressed in the Country Status Reports were put to the participants, and have now been gathered in a quantified analysis. Furthermore, by means of the questionnaire we were also able to establish how the broader field of accident investigation in general is organised in the various European countries, and which functions other professions fulfil in this area.

The questionnaire covered the professional profiles of reconstructionists in the participant countries as well as their working fields. Also, details on the professional qualifications needed to carry out reconstruction and on the availability of education and training were gathered. Detailed information on the availability of certification and on other methods used for the accreditation of experts was obtained. We also inquired as to the resources available to reconstructionists within their own countries, and as to the international exchange of information already taking place. Further, details on the remuneration reconstructionists receive were gathered and compared with that of other professions with a similar standard of academic qualification. It was also established how the various legal systems function, and how reconstructionists are incorporated into these.

Opinions on issues such as the professional profile of reconstructionists, the minimum requirements for their qualification, and the suitability of different certifying systems were also established by means of the questionnaire. These are reflected in the decisions made on the recommendations contained in the Proposal for Guidelines.

Responses from 23 countries were received. Of the 27 countries participating in QUERY, all except Estonia, Lithuania, Malta and Ireland submitted a response. The statistics gathered by means of the questionnaire can be found in chapter 3.2.

Participants were then invited to the second QUERY workshop, which was held in Bratislava on October 20th, 2005.
2.2.2.2 Conference QUERY Phase II, Bratislava

At the second and last QUERY workshop, the evaluation of the questionnaire was presented to the participants. This provided a quantified overview both of the individual countries’ situations and the respondents’ opinions regarding the minimum requirements for the qualification of accident analysts.

Two presentations were then held, entitled ‘Training on the Job vs. Academic Study’. These highlighted the fact that there are two differing positions in Europe as to the qualification of the accident analyst.

The QUERY partner from the Netherlands introduced the participants to the Dutch system. There, only police officers with adequate specialist training are authorised to deal with traffic accidents, including their reconstruction. Detailed guidelines (‘GT norms’, regarding forensic medicine and technical procedures) specify which training courses a police officer must have attended in order to gather evidence at an accident scene, to investigate vehicles or to reconstruct accidents. For each field of activity there is a separate ‘GT Norm’. There is also a supervisory body, the NFI (Netherlands Forensic Institute), in existence. The NFI basically monitors the work of the police. In the event of disputes relating to the gathering of evidence or to the reconstruction of an accident, the NFI can be called in.

In the Netherlands, the police officers who work in the above fields generally do not possess an academic qualification. The Dutch representative at the conference was of the opinion that the training completed by the police can be seen as being on a comparable level to the academic education in other countries. Hence, while the Dutch model could not be applied in other countries, as a comparable set-up does not exist elsewhere, he considered the Dutch model as on a par with the systems in other parts of Europe.

The British representative was of the same opinion. The system there is very similar to the Dutch one. In the UK, a ‘City & Guilds’ certificate is available to police officers, which authorises them to carry out accident investigation. There is also a superordinate authority, the Forensic Science Laboratory, in existence.

In the UK, there are also guidelines as to the limitations of police officers’ competencies and responsibilities. This can be seen in the ‘Road Death Investigation Manual’ published by the Association of Chief Police Officers (APCO), an excerpt of which can be found in appendix V. From the text it becomes clear that a police officer’s training is not always sufficient for the reconstruction of complex accidents.

The second presentation was held by the Polish representative. In Poland, an academic degree is a prerequisite for obtaining accreditation as court expert. Also, proof of working experience in the field has to be produced. Currently, the Polish accreditation criteria are in the process of being tightened further, with a specialist two-year postgraduate training course being demanded.

The vast majority of experts attending the conference were of the opinion that an academic degree in engineering, physics or comparable was an indispensable prerequisite to the professional qualification.

All participants agreed that neither the Dutch nor the British model could be applied in other countries, as elsewhere no comparable set-up exists and would have to be created first.

Furthermore all agreed that an ordinary police officer with only very basic training in accident data collection is not in a position to carry out the reconstruction of an accident. This opinion is also clearly reflected in the questionnaire results; see chapter 2.2.2.2.

In European countries other than the Netherlands or the UK, there is no training on accident investigation available to the police; yet, there are several countries in which the police investigate accidents and are even asked to give evidence in court. This may relate to how the accident might have occurred, an issue on which no conclusions can be drawn without a specialist qualification.

2.2.2.3 Decision on the Proposal for Guidelines

In the discussion of the different points of view in relation to the first recommendation, no consensus could be reached. All participants except the Netherlands and the UK were of the opinion that only academically qualified persons should carry out accident reconstruction. The function of the police should be limited to the gathering of accident evidence, while the analysis of same should be left to academically qualified persons. Due to the disagreement of the representatives from the above two countries, their differing opinion was included in the first recommendation.

In May 2006, well after the conference, the Country Group Austria let us know that in their country, students from both the University as well as the HTL (Höhere Technische Lehranstalt – Higher Institute of Technology) can presently obtain certification as reconstructionists. While with an academic degree 5 years of working experience are required, this increases to 10 years for the HTL qualification. The qualification from the HTL can also be credited towards a degree course at a University of Applied Science – in that event, a degree can be obtained there after only two further years of study.

The second recommendation was unanimously agreed upon. All participants were of the opinion that a pan-European protected title for the expert in accident reconstruction was urgently needed.

The third recommendation was also decided unanimously. In general, the gathering of evidence at an accident scene may be carried out by the police. In the event of a more complex accident, however, an expert with experience in reconstruction would need to be called in. He or she would be in a position to gather and analyse evidence details which an ordinary police officer might overlook and thus not document. Also, this expert could already make recommendations at the accident scene as to further necessary investigation, both on the vehicles involved as well as in relation to the documentation of evidence material. The importance of evidence material may only become clear when the nature of the marks left on road or vehicles has been analysed.

Consensus on the fourth recommendation was reached after an in-depth discussion. All participants agreed that postgraduate studies were of particular importance when they are based on a degree which did not include accident reconstruction as a subject. It was generally bemoaned that there were hardly any European universities which offer accident reconstruction as a subject at degree level. As a consequence, in some countries, there might be an insufficient number of qualified reconstructionists available in the near future. In others, such as Germany, this is already the case today.

This situation could be improved if universities were to offer the subject at least as an elective one.
The fifth recommendation was also unanimously agreed upon. A general grievance was the fact that in many countries the same institutions who offer certification also offer preparatory courses subject to fee. Training and certification should be strictly kept separate.

It would be desirable to have the examination criteria which are used for certification standardised throughout Europe. The relevant subjects for examination were gathered at the conference and put down in the sixth recommendation. In appendix VII, we give a sample set of questions from such an examination for reference. These, prepared by Wolfgang Hugemann, chairman of the largest German Certification Committee, formed part of the 2006 certification examination.

The seventh recommendation appears to be self-evident. But the questionnaire, the *Country Status Reports* and the discussion at the conference itself all showed that issues on remuneration are handled very differently in the various countries.

Particularly in the Eastern European countries, the rates for court-hired experts are significantly lower than those for an expert on the free market (insurance companies, lawyers or private individuals). There is always the risk that, in rare cases, the expert’s objectivity could suffer. A comparable rate of remuneration for a court-hired expert would prevent the enticement of getting too closely involved with lucrative partners on the free market. Poor remuneration, which is not comparable to that on the free market, generally has to be compensated by increasing the number of hours which are invoiced for a particular expert report. This way of invoicing has become a common way of financial survival in quite a few European countries.

A rate of remuneration which is not comparable to that received on the free market is incompatible with the appreciation the reconstructionist should receive for his or her work.

There was also unanimous agreement on the eighth agreement. In some Eastern European countries, but especially in Germany and Austria, the professional profile of the expert for accident reconstruction is not clearly distinguished from that of the expert for damage calculation. The participants were all of the opinion that the tasks in these two professions greatly differ from each other.

The calculation of damages is a process which is standardised to a large degree. Only very few of the skills necessary for the carrying out of damage calculation overlap with those a reconstructionist needs to possess as per recommendation VI. There was consensus among all participants that therefore the terms used for these two areas would also need to be clearly distinguished from each other.

The full *Proposal for European Guidelines in Accident Reconstruction* is printed in chapter 1. Translations of same into EU languages can be found in chapter 4.

In appendix VI, we give a sample set of questions from such an examination for reference. These, prepared by Wolfgang Hugemann, chairperson of the largest German Certification Committee, formed part of the 2006 certification examination.
3. The Research Results of the QUERY Project
3.1 Country Status Reports

Qualification of European Reconstructionists
Budapest workshop, Nov 4, 2004

Austria

Univ. Prof. DI Dr. Ernst Pfleger,
ernst.pfleger@unfallforschung.at

Qualification


In order to become a registered expert, the following general requirements of competence need to be fulfilled: physical and mental aptitude, trustability, the Austrian or citizenship of other European Union Member State, as well as the citizenship of other contracting states of the Treaty on the European Economic Area. In addition to that, the membership in the Swiss Confederation, the residency or place of work in the district of registration, and orderly economic conditions, are possible preconditions for registration.

To become registered, the applicant needs to meet the following professional requirements: He or she needs to possess expert knowledge of the desired field of expertise, as well as the core regulations of the procedural law, and the expert system as such. Furthermore, he or she is required to have skills in accumulating evidence and laying out a coherent and comprehensible expertise.

Moreover, the authorities ask for a ten-year professional practice in a responsible position in a destined or related field of activity, immediate before registration. However, in cases in which the applicant has graduated from Technical University or holds a Higher Vocational School Degree, a five-year practice of that kind is demanded. For example, in the field of “Roadworthiness” a broad technical training including mechanical and physical engineering is recommended. Respective knowledge of apperception psychology is also called for.

Expert Registration

The registration of experts in a particular expert list, is carried out by the presidents of state courts in the applicant’s place of work.

In the course of enrolment, the chairman of a court of law obtains an expertise by an independent commission, in order to examine the applicant’s competence, his or her professional qualification and the knowledge of the processes of regulation.

The commission comprises a judge as its chairman and two specialists who have either been appointed by the chamber or the legal lobby of the respective specialist area, and the Austrian Association of Publicly Sworn and Certified Experts.

The commission is to examine the applicant orally, if need be, also in written form, whereas he or she can be asked to deliver a test expertise. For purposes of exam preparation, the Austrian Association of Officially Sworn and Legally Certified Experts offers introductory seminars in judicial training that are considered a precondition for admission.

In contrast, applicants with an academic qualification in the respective field from an EU-Member State university, a contract- ing state of the Treaty on the European Economic Area, or the Swiss Confederation, are considered sufficiently qualified so that this part of the exam does not apply for them. This holds also for those applicants whose professional code entitles them to making expertise (i.e. Specially Certified Engineers).

After a passed exam, the expert is to be sworn in which obliges him or her to make a thorough and complete investigation, and deliver an expertise to the best of one’s knowledge and in accordance with the rule of science. Furthermore the expert is sworn to impartiality and thus obliged to equally consider both sides of the evidence. In addition to guaranteed quality of expertise, the official certification has the effect that the expert need not take an oath at the court.

For the purpose of identification, the expert receives an ID card with a photo containing such important information as (dates, field of expertise, limitation, etc.) which he/she has to carry on him/her while on duty. The written reports are to be stamped with a round stamp containing at least the expert’s name and the title “Officially Sworn and Legally Certified Expert”. Furthermore, additional specification such as the person’s field of expertise, or its equivalent code would be useful.

The expert registration for a particular field of expertise lasts for five years, and can be extended upon request for an additional ten years. Since the renewal can only happen when the (SDG) criteria are met, it is necessary for the expert to upgrade his or her knowledge through further training. Alongside a regular control of the expert’s activity by the courts, on particular occasions, a new verification can be requested.

For the purpose of quality assurance, a personal education book has been introduced in which the Austrian Association of Experts records the expert’s further training. An entry into that book is made after an evaluation by the State Associations of the person’s attendance of pertinent courses concerning either general issues of the expert system, or lectures and publications related to his or her field of expertise.

The Status of Expert

The expert in Austria is an independent and impartial sworn body aiding the courts in both criminal and civil proceedings. In contrast, to some European legal systems, where the expert’s opinion is treated like any other type of witness evidence, the expert, in Austrian procedural law, is not only a source of more authentic evidence, but also a helper to the court and the judge’s assistant providing him or her with necessary expert knowledge. In such a way, the expert has a great effect on the judge’s fact finding. Even though the expert remains an exhibit, however, because of the increasing complexity of fact finding the judge’s consideration of evidence relies greatly upon his or her expertise.

Furthermore, is the consultation of a legally certified expert for the purpose of private opinion, whose sorting out effect is a relief to the courts, also in the interest of the expert himself. Such private opinions are increasingly brought forward for refutation of findings of legal expert evidence. It also depends greatly on the expert’s authority whether a further legal opinion is requested or not. However, because of the standardized certification since...
01.01.1999, the room for argumentation based on differing quality of experts should have ceased to exist.

**Conditions of Work**

In Austria, only a part of the enlisted experts work fulltime as accident assessors. The other part pursue their assessor activity alongside their main profession which for the majority of them is, in return, closely related to their field of expertise. Amongst them are owners of specialist shops as well as experts on specific technical problems and subjects. In addition to that, some of them are on the payroll of insurance companies where they clarify repair-related questions.

As far as the payment of experts in administration and court proceedings is concerned, it is officially regulated by the (GebAG) law, (www.sachverstaendige.at). Although the fees for a private expertise are subject to negotiation, they must not be disproportionate to the rendered services (see duty of warning and disclosure to the client).

For coverage of possible claims, the Austrian experts are ordered by law to effect a liability insurance with a minimum sum insured for every insured event.

For all individuals and judges seeking expert opinion, it is possible to choose an expert and get in touch quickly with one by visiting the web page (www.sdgliste.justiz.gv.at/) where all legal experts and translators are enlisted. This database is set up by the Federal Ministry of Justice and is free and publicly accessible.

**Working Fields**

The section “09 safety” comprises 23 very different fields of expertise, whereas the section “09.01 road safety: road traffic (primarily motor vehicle)” and “09.11 car repair and car break down (including assessment)” quantitatively outweigh other ones in courts.

However, the autonomy of the area “09.02 safety – simulation of traffic accidents” should especially be pointed out. For in order to be registered in it, the candidate needs to prove his or her very good mastery of the area 09.01, whereas a perennial activity in it is recommended. The candidate’s skills in simulation, his or her basic physical knowledge and the foundations and limitations or preconditions for the application of used models, need to be verified in an oral test.

There are further significant areas of expertise of the section 09, and they comprise the following fields of work: auto body, motor vehicle quantification and assessment, car repair, automobile electronics, etc. The remaining areas rarely need fields of expertise in courts. A complete register of all areas of expertise are to be found online at (www.sachverstaendige.at/nomenklatur.html)

The expert on his part, however, is to immediately verify whether he is fit for the type of expertise he has been assigned to do or not. Should there be any doubts about his or her skills, the expert is to refuse to advise a party. However, should there only be doubts about certain parts of the assessment, the expert is to notify the client and suggest a joint expertise with another expert.

**Associations, institutions, activities**

The majority of experts in Austria are members of the “Austrian Association of Publicly Sworn and Legally Certified Experts”. This umbrella association, comprising four state associations, is concerned with the assurance of continuance and further development of the expert system in Austria.

It is a special honour for this Association, that it has been assigned by the “Federal Law of the Publicly Sworn and Legally Certified Experts and Translators (SDG)” with the duty to appoint one of the examiners of the commission, who in the course of the certification process, is to produce an expertise. Such an expertise is also rendered in cases of renewed certification, and when an expert is deprived of his legal status.

As far as possibilities for exchange of expert opinions, particularly where the field of accident reconstruction, is concerned, the Austrian Association organizes frequent conventions in the states of: Wien-Niederösterreich-Burgenland, Steiermark-Kärnten, Oberösterreich-Salzburg and Tirol-Vorarlberg. Those conferences are concerned mainly with already settled court proceedings. For instance, in the State Association Wien-Niederösterreich-Burgenland it is the group VUREKO (Commission of Traffic Accident Reconstruction) who in circular meetings offers discussion sessions devoted to special problems of the expert practice.

Alongside the Austrian Association which contains experts from all the various areas of expertise, in the year of 2004 an independent “Austrian Country Group” under the wings of the European Association of Accident Research and Analysis was founded. All members of that country group are traffic accident analysts. The “Austrian Country Group”, the EVU organizes seminars where the experts can upgrade their knowledge by studying the latest findings of research. In addition to that, the Austrian Association of Court Experts in cooperation with the Austrian Association of Judges holds further education courses. Furthermore, there are interdisciplinary seminars like the Annual International Seminar in Gastein that has “Road Traffic Accident and Motor Vehicle Loss” as its topic, targeting likewise judges, lawyers and experts.

The research by the Austrian accident analysts, has produced a number of simulation programs for the reconstruction of traffic accidents, but also viewpoint-recording programs with world-wide respect. The Programs “Analyser Pro” (www.analyzer.at), “PC-Crash” (www.dsd.at) and the so-called viewpointsystem-Blickerfassung (www.unfallforschung.at), deserve particular accentuation. Especially the last one of them has helped produce insights into the visual behaviour of motor vehicle drivers. With the help of special light measurement tests, some particular light-concerning questions of perceptibility could have been answered. Also because of the use of physiological measuring devices, information about the driver’s activation and stress factor under exceptional traffic and driving conditions could have been gathered.
**Belgium**

*Ing. Marc VAN LIERDE (CERAC)*

vanlierde@cerac.be

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**Qualification**

In the absence of any official regulation or legal framework, people who work as a traffic accident reconstructionist have at least an equivalent to a post graduate technical degree (three years cycle). So, usually, reconstructionists are either automotive experts or mechanical engineers.

One should keep in mind, that at the moment the profession of automotive expert is not legally recognised. Because this title is not protected, it is always at risk of being abused. In the past, some courts called on people with alleged high intellectual profiles (retired aviators or army officers) regardless of their specific skills in accident reconstruction or mechanical engineering.

In the field of accident reconstruction, there is no specific education except the lessons given during the post graduate technical studies. Therefore, the newcomer has to learn his profession on the job, coached by an experienced colleague.

Recently, the Gent University organised a general course (not specifically aimed at accident reconstruction) in judicial expertise (in Dutch). A similar course should exist in the near future at the Liège University (in French).

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**Certification**

Again, in the absence of a legal framework, the candidate expert does not have to prove his skills by passing an official examination.

Within the context of court certification (intervention upon request of a public prosecutor immediately after the accident), the authorities carry on a public inquiry. Admittance criteria remain unclear, apart from a careful investigation concerning private life's integrity. So, we can expect that only skilled people are called on i.e. experienced automotive experts or engineers.

In civil litigation, the procedure is almost equivalent, but in this realm, the expert lists are official. Once certified by one court, it is easier for the expert to be certified by another one.

In general, this expert in this area, regardless who his clients are (insurance companies, public prosecutors or courts) is required due to his expertise.

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**Position in court**

Experts can be called on at different stages of the proceeding.

Immediately after the traffic accident, the expert can intervene upon request of the public prosecutor (only regarding the criminal aspect of the case). His assignment is to support the prosecutor’s charge concerning recorded offences (concerning either disregard of Civil Code or Highway Code). Intervention of the expert may arise from two situations, either the seriousness of the accident (death of a road user) or the difficulties to understand the circumstances of the accident.

Unfortunately, the severity of the accident does not always justify the intervention of an expert called by the public prosecutor. This may cause problems when civil responsibilities must be established upon the often incomplete and insufficient observations of the reporting officers.

In this case, the expert sends his report directly to the prosecutor.

When intervening before the Police Court, the report written upon the Public Prosecutor’s request is often preferred to the reports produced by private experts hired by one of the parties.

The parties are allowed to call on their own expert in order to give an opinion concerning either the circumstances of the accident or the report published by Public Prosecutor’s expert. These reports are given in written form and are submitted to the case file.

Then, having received all opinions, the Police Court may give a verdict. In case of technical dispute, the Court may ask each expert to make an oral statement in Court or call on a second expert if the first expert’s report would prove to be inadequate to establish the responsibilities. Technical advisors of the parties may intervene in this second expert evaluation by adding their remarks as soon as the report preliminaries are unclosed. The Public Prosecutor’s expert must reply to the possible remarks of the private experts and reach at a conclusion concerning the accident mechanism.

The expert may also intervene in an appeal procedure concerning the technical context of the case.

The reconstructionist testifies in court under oath of expert or witness, the juridical term is somewhat unprecise.

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**Working conditions**

Most of reconstructionists work either as independents or as associates in offices. Some of them are employees in bigger companies. According to the amount of work, a secretary and/or a technical assistant may support the expert.

When intervening in criminal court, fees are determined by law: 42.36 € per hour for an automotive expert and 54.47 € per hour for an engineer. The amount of working hours is also determined by law according to the seriousness of the accident. Any other fees are also fixed. The tariffs are set annually and are published officially.

Usually, no deposit is given. Expenses and fees are paid quite a long time (months or years) after the expert’s report has been published.

When called by a civil court, the reconstructionist can fix expenses and fees freely. However, he is obliged to determine them according to the size of the case. Usually, deposits are paid immediately after the first meeting with the parties.

Private expert expenses and fees are also freely fixed. Usually, they amount from 60 to 100 € per hour according to the expert’s competence. The expert is free to decide whether or not a deposit is necessary.

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**Working fields**

The activity of traffic accidents reconstructionist is so specialised that it is financially justified only when important private interests are involved (death or severe injury). The only task of the expert is to bring technical precisions regarding the accident mechanism and circumstances.

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**Associations, institutions, activities**

Although most of automotive experts gather in a professional association (UPEX), these association is not very interesting for an expert specialised in accident reconstruction.
Professional association such as CEJAA (Chambre des Experts Judiciaire en Automobile et Accidentologie) sometimes organise training for reconstructionists.

Actions taken by the EVU or the AREC Group are highly appreciated.

Unfortunately, there are no initial courses, introducing novices to the art of accident reconstruction.

Czech Republic


System of Expert Activities in the Czech Republic and Conditions of Appointment

In the Czech Republic, expert activities are established by law no. 36/1967 Col. on experts and interpreters and by execution regulation of the Ministry of Justice no. 37/1967 Col. (as amended by regulations no. 11/1985 Col., no. 184/1990 Col., no. 77/1993 Col. and no. 432/2002 Col.). Expert activities are defined as activities carried out for the purposes of government bodies, or in relation with legal acts of citizens and organisations. Expert activities related e.g. to the fulfilment of production tasks of entities are not covered by the law on experts. Generally such activities are carried out against a trading certificate as per law 455/1991 Col., on trading enterprise.

Expert activities can be executed by experts listed on the list of experts and expert institutions inscribed on the list of expert institutions. Only in exceptional cases and for the purpose of a single report, the governmental body can appoint a person who is not listed (if this person complies with the required conditions).

Experts for the individual fields are appointed by the Minister of Justice or the chief judge of the regional court. Expert institutes are appointed by the Minister of Justice. After being appointed, the experts are inscribed on the list of experts and the expert institutes on the corresponding list. The list is accessible for public at the following address: http://portal.justice.cz/uvod/justice.aspx. The law establishes two types of expert institutes. In the first part of the list of expert institutes, institutes (or other institutions) which specialise in expert activities (Criminology Institute of the Police of the Czech Republic, some expert offices). In the second part, scientific institutes, universities and bodies are listed for which expert activities are not the main objectives. These are authorised to carry out expert activities in difficult cases which require extraordinary scientific judgement. The Institute for Forensic Engineering of the Brno University of Technology is one of such an expert body.

Expert activities are managed by a department of the Ministry of Justice; the advisory body of the Ministry of Justice and commissions for expert affairs of regional courts are advisory bodies for the purposes of expert activities. Members of these are selected from the experts and appointed by the Minister of Justice.

In order to be appointed as an expert, the person must have the Czech citizenship (this condition may be dispensed), necessary knowledge and experience in the field, personal characteristics (penal irreproachability is especially required) and approval of the appointment. Graduates from special courses on expert activities are preferred. The experts appointed are entitled to carry out their expert activities on the whole Czech territory.

Experts are obliged to keep their respective expert diaries in which each expert report is listed.

When working for governmental authorities, the expert is entitled to a reward as per the established rates (from 100 to 350 CZK per hour). In the cases of activities carried out for citizens, the price is established by agreement.
The University of Technology of Brno (www.vutbr.cz) has carried out the systematic education of experts in road transport and engineering since 1969; later on, economics was added – valuation of properties and establishment of claim amount. Since then, the Institute for Forensic Engineering of the University of Technology of Brno (www.usi.vutbr.cz) has prepared 566 forensic specialists who attended 22 postgraduate courses specialised in road accident analysis. Within the framework of its scientific activities and per order of the Ministry of Justice, the Institute developed standards for expert proceedings carried out when analysing road accidents, valuation of motor vehicles and establishment of claim damage. The courses are organised by virtue of the Ministry of Justice and are interdisciplinary in nature. In order to obtain a special qualification so that the evaluations can be used for legal purposes, the syllabus also includes selected parts of jurisdiction, forensic medicine, economics and necessary fields of technology.

In order to assure a uniform, highly specialised implementation of expert activities, the IFE of the BUT also developed expert standards and university textbooks, such as:

- Bradáč A. and Col.: Forensic Engineering
- Bradáč A.: Mathematic-Graphic Analysis of the Course and Cause of a Road Accident
- Vémola A.: Vehicle Repair
- Meduna J.: Applied Mechanics
- Bradáč A. and Col.: Experts Guidebook – Road Accident Analysis
- Nop D.: Traffic Control and Psychology of the Driver


At present, there are 8 expert institutes and 9 scientific institutions specialised in road transport and technical condition of vehicles.
Doctorate Studies in Road Accident Analysis

Recently, the educational programme was supplemented by doctorate studies, for which the University of Technology of Brno was accredited by the Ministry of Education, Youth and Physical Education of the CR in 1995. The road accident analysis specialisation has been studied so far by eight doctors, who graduated from the Faculty of Machine Engineering (www.fme.vutbr.cz) cooperating with the Institute for Forensic Engineering. Among them was one student from Germany and one from Croatia; sixteen students are studying at the moment. Graduates are entitled to use the “doctor” title (Ph.D). Additionally, students can choose to study in German or English.

Further Education of Accident Reconstructionists in the CR

Further education is organised in co-operation with the Institute for Forensic Engineering of the University of Technology of Brno and expert associations (EVU – National Group – www.evu.cz – in the CR and the Association of Experts and Adjusters of the CR, www.azo.cz). Regular workshops (recently workshops on topical issues of the usage of computer technology in road accident analysis) and conferences (every year in January in Brno on theoretical issues, in June at the occasion of the automotive fairs Autotec or Autosalon Brno, a conference on topical problems – in 2004 coach accidents) are organised. A correspondence training is regularly organised in form of tests.

The Institute for Forensic Engineering of the University of Technology of Brno issues the Forensic Engineering magazine – the only publicly accessible magazine for forensic experts from technical and economical fields in the Czech Republic. In this magazine, experts who work in the field, researchers from research and development of different fields of technology, and students of the above-mentioned doctor study programme publish their articles.

In 1986, the Institute of Forensic Engineering of the University of Žilina, Slovakia was founded by Prof. Ing. Gustáv Kasanicky, CSc. and his predecessor Prof. Ing. Cyril Kubjatko, CSc. Both had a profound experience in the education of experts obtained at the Institute for Forensic Engineering of the University of Technology of Brno. At the newly founded institute, education of future experts for the Slovak Republic takes place, as before such education had been also provided in Brno.

Table 4: Curriculum of Forensic Expert Studies – Road Accident Analysts in the IFI of the BUT

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lessons</th>
<th>Credit</th>
<th>Exam</th>
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<tbody>
<tr>
<td>Rights and obligation of experts, forensic engineering</td>
<td>10</td>
<td></td>
<td></td>
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<tr>
<td>Selected laws</td>
<td>20</td>
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<td>e</td>
</tr>
<tr>
<td>Tax system</td>
<td>5</td>
<td>c</td>
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<tr>
<td>Accounting</td>
<td>5</td>
<td>c</td>
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<tr>
<td>Computer technology in practical application for expert I</td>
<td>5</td>
<td>c</td>
<td></td>
</tr>
<tr>
<td>Structure and useful life of motor vehicles and evaluation of these</td>
<td>20</td>
<td></td>
<td>e</td>
</tr>
<tr>
<td>Vehicle diagnostics and repair technology</td>
<td>15</td>
<td>c</td>
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<td>Forensic engineering in ASN</td>
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<td>Selected topics from physics and mathematics</td>
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<td>Theory of vehicles II – special vehicles</td>
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<td>Rail transport</td>
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<td>Selected topics from forensic medicine</td>
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<td>Visual perception of the driver</td>
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<td>Methodology of expert experiment; data for accident analysis and the processing of these</td>
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<td>Applied mechanics</td>
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<td>Theory of technical analysis of road accidents</td>
<td>40</td>
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<td>Dynamics of collision phenomena</td>
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<td>Survey of utility vehicles after an accident</td>
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<td>Survey methodology</td>
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<td>e</td>
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<td>Problematic studies of road accident analysis</td>
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<td>Computer technology in practical application for experts for the analysis of road accidents</td>
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<td>c</td>
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Certification of Experts in the CR

The certification of an expert should provide the clients, especially governmental bodies, with corresponding confidence in the expert's capabilities to carry out prescribed expert tasks, express qualified opinions and provide relevant specialised services.

The objective of the Institute for Forensic Engineering of the University of Technology of Brno is to take active part in the expert certification process in the given field within the CR and the existing European structures, enabling Czech experts to obtain through the EIA notification valuable certificates recognised at European level. The chancellor of the University of Technology of Brno founded at the Institute for Forensic Engineering of the University of Technology of Brno a workplace for the certification of experts as per the Czech standard ČSN EN 75 013 “General criteria for certification bodies for the certification of persons” – certification body of the Institute for Forensic Engineering (hereinafter CB IFE). The Quality Manual was created together with pertinent criteria documents, a board of experts was founded and trained for the examining committee, a Council for Certification was founded composed of the representatives of all bodies involved and its pertinent commission. On 30.11.1999, the Certification Body of the Institute for Forensic Engineering of the University of Technology of Brno was accredited under the number 3072 by the National Accreditation Office, which is the Czech Institute for Accreditation (ČIA) for the Certification of Persons. The objective of the accreditation was the certification of experts for the following specialisations:

- road accident analysis (QSN), and
- economy (price and valuations of companies – QEP; immovable properties – QEN; and movable properties – QEM).

After a three-year validity period and an additional auditing, the Czech Institute for Accreditation issued a certificate valid until 31.12.2007 on 04.12.2002.

The certification of the national certification institute also implies that the certificates issued by CB IFE should be recognised in all the countries which signed the European Agreement on the Certificate Recognition within the European Co-operation for Accreditation. The Czech Institute for Accreditation is its member.

The applicant for the certification in the CB IFE must comply with the following requirements:

- minimum age 20 years (there is no limitation as to the maximum age);
- to have corresponding education;
- to participate in the special education programme for experts;
- to have required practice;
- to have necessary knowledge and experience in the specialisation for which s/he wishes to obtain the certificate in;
- to have personal characteristics which imply that s/he will be capable of carrying out the expert activities for which s/he wishes to be certified;
- to submit identity documents, education certificates, a record of the work carried out so far (findings, statements), and other documents required by the certification body.

During the certification process, the fact is verified whether the applicant complies with the criteria, which include all knowledge and skills which an expert should have:

- E1 – 1: General initial requirements for the applicant for certification
- E1 – 2: Qualification criteria for an expert in the field of road accident analysis

The certification exam is composed of three parts:

- practical exam
- written exam
- oral exam

For the practical exam, it is necessary to prepare work covering at least one topic of the below-mentioned fields:

Field A)
- Collision of a vehicle with a pedestrian
- Collision of a vehicle with a cyclist

Field B)
- Collision of vehicles – frontal direct centric
- Collision of vehicles – frontal direct eccentric
- Collision of vehicles – frontal transversal centric
- Collision of vehicles – frontal transversal eccentric
- Causes why the vehicle got off the curve
- Analysis of the passengers positions at the moment of the accident
- Analysis of accidents at crossroads equipped with traffic light
- Bicycle accidents
- Motorcycle accidents
- Accidents of truck-trailer combinations

Field C)
- Defects of brake assembly as causes of road accidents (real and apparent)
- Defects of steering as causes of road accidents (real and apparent)
- Tyre defects as causes of road accidents

After the practical test, the written exam and the oral exams (interview related to the written works, test and further oral examination) are carried out.

Experts holding the certificate are controlled regularly by the certification body of the IFE. These controls check compliance with the reference criteria education, work in the relevant field and professional development – the so-called regular supervisor programme. Verification is done at two levels:

- regular scheduled supervision carried out on dates according to the supervision plan established by the Certification Body of IFE for the corresponding year;
- random supervision carried out on the basis of suggestions received from qualified public bodies, institutions, or clients.
The supervision of the certificate holders is carried out as follows:

- by means of a questionnaire;
- by means of an interview with the certificate holder (if there is a complaint filed against the certificate holder)

Persons who have not worked in their respective fields for three years and who are not able to give evidence of their activities in their respective fields with at least three experts’ evaluations, must undergo the full certification process again.

The supervision is done by independent members of the examining committee; as a result of their work, a supervision protocol is compiled.

The Board of Certification (managing board) is the top body of the Certification Body of IFE, which was established by the chancellor of the University of Technology of Brno. This Board is responsible for the certification process as per the Czech standard ČSN EN 45 013, article 5. The Board is composed of representatives of all the bodies which may be involved in the certification process (departments of finance and justice, banking, universities, experts associations – Association of Experts and Adjusters of the CR, EVU (European Society for Investigation and Analysis of Accidents – National Group of the CR). The Board of Certification confirms the director of the Certification Body of IFE.

Members of the team of reviewers are a group of external staff employed by the Certification Body with the objective to carry out examination and evaluation activities in the individual certification areas.

The Certification Body of the IFE works in compliance with the rules established in the following documents:

- The Czech standard ČSN EN 45 013 – General Criteria for Certification Bodies carrying out the certification of persons;
- Guidelines for Accreditation MPA 60 - 01 - 95 (including the change list 01/96 of MPA 60 - 01 - 95) of the Czech Institute for Accreditation (CzIA);
- Organisation Standards (OS) of the founder of the CO - IFE of the BUT.

In November 2003, a standard ČSN EN ISO/IEC 17024 was issued and entered into force called “Assessment of Compliance – General Requirements for Bodies Certifying Persons”. This standard resulted from the revision of the standard ČSN EN 45013. In order to implement the standard (issued as ISO/IEC 17024 in April 2003), the body of IAF (the instructions of which are binding for the CzIA which is the signatory of the Multilateral Agreement on the Mutual Recognition) established a transition period of two years since its issuance. This implies that all the certification bodies certifying persons are obliged to implement the standard in their respective systems by 31.3.2005 at the latest. For the implementation of the standard, the CzIA issued the Guidelines for Accreditation MPA 60 - 01 – 04.

This standard revises the existing standard, determining the requirements for the certification process described in the quality manual and in the individual code of practices. Among other things, the terminology has been changed. The term 'applicant' was changed into 'candidate'; 'certification of personnel' was replaced by 'certification of persons'. The term 'Board of Certification' (managing board) was changed into 'Programme Commission'.

The Programme Commission (hereinafter PC) is responsible for working out and supervising the certification process, and it must rightly represent the interests of all the parties involved significantly in the certification programme. The Certification Body informs the PC of any changes to the requirements for certification, and it must take the comments and suggestions of the PC into consideration prior to decision and implementation. The PC also approves conditions, frequency and range of supervision activities. Further, the PC approves conditions, frequency and content of re-certification. The standard also stresses that persons who take decisions on awarding of certificates are not allowed to participate in examinations, education or training of candidates. In the chapter “Requirements for Certification Bodies”, the standard states that if the certification body is a part of a rather large legal entity, the accreditation can be awarded only to the legal entity as a whole. In this case, the structure of the whole legal entity may be subject to an audit by the accreditation body with the objective to determine activities related to the certification body. The requirements for the “Organisational Structure” are very strict as to the analysis, documentation and determination of the control of confidentiality, objectiveness and neutrality in the case of the usage of services of a related body.

The certification body of the IFE of the BUT is gradually undergoing a transition into such a standard.

Research and Development in Road Accident Analysis in the Czech Republic

In the Czech Republic, research and development in road accident analysis is carried out mostly in the IFE of the BUT:

- within the framework of final works of the forensic specialisation graduates;
- within the framework of dissertations of doctor studies graduates;
- within the framework of projects paid by the Grant Agency of the Czech Republic.
Denmark

Per Bo Hansen,
Per-bo@hansen.tdcdsl.dk

Qualification

As a basic education you need to be an engineer to be an officially certified reconstructionist. It takes 5 years to get the university degree. A degree from universities for applied science is also accepted, this normally takes 3 – 4 years to get, depending on your pre-qualifications.

As so qualified, you will receive further education from the Ministry of Justice and Ministry of Transportation, as pure reconstructionists so far did not exist in Denmark. The professional profile is called bilinspektør (Vehicle Inspector) and comprises a lot of other tasks, i.e. to decide

- whether or not to give driving licenses (examiners) for trucks and busses
- whether or not modifications of vehicles for disabled persons are in accordance with Danish or European regulations
- technical check of vehicles, both the annual kind as well as the one needed for registration.

The Danish association of bilinspektører sees the combination of driver license examination, vehicle inspections, and the road accident reconstruction as “three of a kind”. In all three areas you have to pass a test (examination). But no one has been educated for the last 14 years, and the professional profile is going to change. For details see below.

Certification

When passing the examinations and as such qualified as reconstructionist, you will officially become (the title:) bilinspektør (Vehicle Inspector). The name often, and understandable, mislead people to believe that we (only) inspect vehicles due to control, but the title is anchored in the history (and in the law material) and therefore not easily changed.

In Denmark we have to groups of bilinspektører, one group as employed in the before mentioned ministries, and one serving the army.

The certification is not available for any other groups or single persons than the ones mentioned.

Position in court

In most cases the reconstructionist is hired by the police and therefore serve both of the litigant parties equally. It seldom happens that more than one expert appears in court. In civil litigation, expert testimony is normally given solely in written form. Additional questions by the litigant parties are posed in written form and also answered that way. A (final) oral examination of the expert happens in about 5 – 10% of all cases.

If a litigant party directly hires a private expert to give a written opinion in a civil procedure, the result may be kept secret – or handed out in total, both to the court and the opponent party. In criminal procedure, the public prosecutor as to reveal any inconvenient (as he may see it) results to the accused and his lawyer.

it can only be done by also revealing the results to one's opponents. In cases where the written opinion is not handed out to the opponents, it will not be allowed in court.

Private expert opinion is most often consulted during the preparation of a possible trial or appeal, in order to gather ammunition or in order to calculate the process risk more accurately. Very seldom, experts may be asked to check the written testimony of the expert hired by the court and due to the strong position of the court's expert (the official “bilinspektør”) it is rather difficult to convince the court otherwise, and the position of the private expert often is rather weak.

The statement of the expert and the officially certified expert will be read up loudly and he has to confirm that he has made it on his own and to specify on which terms it was made – and why he thinks that the judge and the jury should listen to him.

Working conditions

All officially work in either Statens Bilinspektion or related organisations. The reconstructionist however is allowed to work “for themselves” in situations, either asked for as a person by the court or if “Statens Bilinspektion” don't want to be involved in the type of work (often civil litigation).

The payment of reconstructionists is settled by either the judge or as an agreement and is normally about 100 € per hour. For a private expert opinion, an hourly charge may be settled freely and normally lies in the range of 100 – 130 €. The amount is not in any way tied to the claim.

It is indeed very easy to initiate a lawsuit in Denmark; there are neither restrictions on the minimum account to claim nor on arbitration to pass in advance.

However, if the accused is sentenced to pay less than about 100 €, the case normally ends in local court (The issue can not be raised in a higher court.)

Working fields

The certified expert is not obliged to accept any case falling into the field he is certified in.

Vehicular accidents will be handled in Statens Bilinspektion if so desired by the police. If needed (if dead or deadly wounded people) the bilinspektør will be present on location immediately after the accident has taken place, asked by the police.

Technical proof of insurance fraud will normally be handled by independent experts, that is; if the police in the same time want to press charges, they will call for Statens Bilinspektion.

Biomechanical loading during impact (in regard to whiplash injury) is handled by independent experts

Insecure loads and defect traffic surveying devices can be investigated by both, a private expert or a bilinspektør.

Nullification of sale because of (claimed) technical deficiencies will not be handled in Statens Bilinspektion.

Technical examination of vehicles after accidents mostly is handled in Statens Bilinspektion.

Calculation of repair costs is not within the working field.

Associations, institutions, activities.

Statens Bilinspektion www.bilsyn.dk is at least a few more month an institution under the Ministry of Transportation www.trm.dk However the Danish government has decided to sell the whole institution, and as I write these words no one officially knows about the future for the Danish reconstructionists.
There is in addition to that a bunch of individuals practising
reconstruction. I know of no one that is not or hasn’t been “bilin-
spektør”.

The only firm as such know by me is DanCrash www.dancrash.
dk only consisting of few people, and without exceptions with
other jobs beside that.

Bilinspektørerne have a Association; “BIF” www.bilinspektør.
dk

Post Scriptum

Denmark is at the moment in between to systems; the known
one with primary one participant, Statens Bilinspektion, and a
new system with competition, that probably will leave us with
a system more similar to the one known else where in Europe,
including Germany.

Estonia

Eriks Grigis,
egrigis@delfi.lv

Qualifications

The basic requirement for the certification as a reconstructionist
is a university degree in mechanical engineering (in former times
graduate engineer, now master’s degree in automobile mechanics
or comparable faculties). Studies used to take 5 years and now
take 3 + 2 years – 3 year in order to get a bachelor’s degree and 2
additional years in order to get a master’s degree.

Prior to his certification, the reconstructionist must further-
more have 2 years of experience in the field as an apprentice at
the court expert chamber. This time may be split into 2 × 1 year.
In the beginning, a apprentice of the CEC will receive a literature
catalogue that he has to study himself. During the first year, the
apprentice has to be present at court trials. After the trial, he has
to exchange his opinions with a mature vehicle expert, being
responsible for him during his apprenticeships.

During the second year, the apprentice will prepare the expert
opinions of the mature expert. They will conduct simple math-
ematical and physical calculations and will learn to put their ideas
into words. The report will be signed by both, the mature expert
and the apprentice.

Furthermore, the apprentice has to have the driver’s license of
class B and er muss nach Fachanforderungen für den staatlichen
Dienst verantwortlich sein.

Certification

The experts of most faculties are certified by the
Gerichtsexpertise.

This takes the responsibility for the recruiting of qualified
experts aiding jurisdiction in this respect. This is still the kind of
certification most accepted.

During recent years, private organisations have made attempts
to establish an ISO 9000 compatible certification. These attempts
have failed so far as the courts are solely founded on experts certi-
fied by the well-established system are concerned.

Position of the expert in court

In most cases the reconstructionist is hired by the court, not
by one of the litigant parties, and there is therefore only one
joint expert in the trial. The proof by expert opinion is one of
the five basic means of proof both in civil litigation and public
prosecution.

In criminal as well as in civil proceedings, the expert’s report
is submitted in written form. Additional questions of the litigant
parties are also posted in written form and are also answered
that way.

Private expert opinion is not often consulted during the prepa-
ration of a possible trial or appeal. More frequently, experts may
be asked to check the written testimony of the expert hired by
the court. Generally, the court will follow the opinion of its own
expert. The position of the private expert is rather weak, even if
he is officially certified.

Working conditions

The court expert receives a monthly salary.
Working fields
Within the field of vehicular accident reconstruction there is now further specialisation. The certified expert is obliged to accept any case of court request falling into the field he is certified in. This includes vehicular accidents and technical examination of vehicles after accidents. The calculation of repair costs is usually the working field of another kind of expert. But the Gerichtsexpertise may also answer questions regarding repair costs and amount of damage by use of specially trained experts.

Associations, Institutions, activities
The representatives of the Gerichtsexpertise visit the annual Polish conference of the EVU country group. Furthermore, they make use of PC-crash.

German literature on accident reconstruction is not made much use of. Experience is mostly exchanged with colleagues from Swedish and Finnish police forces.

Finland
Kalle Parkkari
kalle.parkkari@vakes.fi

Qualification
There are no official requirements to become a reconstructionist. Hence there is no minimum competence, no examination and no quality control.

Working conditions
Usually there is no remuneration. The investigator acts as a witness in the court. If the investigator is asked to witness, he shall be present at court, otherwise he is punished. Usually no expenses other than travel expenses are paid. Rarely a small witness fee may be paid.

A litigant party or the accused may hire an expert investigator to perform calculations. Often they assume that investigation and calculations could be made for free.

Other issues
Most of the cases where reconstruction is made concern fatal road accidents where investigation teams have performed an investigation according to the Finnish legislation on accident investigation. However, these investigations are solely made for traffic safety purposes and may not be used for liability issues:

“Restriction of the use of the investigation report
This accident has been investigated and the investigation report has been written in accordance with Act No. 24/2001 for the improvement of road safety. The investigation does not address liability for the accident or liability for damages. Use of this investigation report for purposes other than improvement of road safety must be avoided and no information contained herein may be linked to personal data.”

Accident investigation – the work of VALT
Finnish insurers’ joint road safety work is based on data recorded on road accidents occurring in Finland. In cooperation with the authorities, the Finnish Motor Insurers’ Centre (FMIC), a statutory joint body of insurance companies, maintains extensive and in-depth multidisciplinary investigation work on serious road accidents. Secondly, insurance companies deliver data on each accident compensated from motor liability insurance to the FMIC Traffic Safety Committee of Insurance Companies (VALT) for use in road safety work. Thirdly, the traffic safety scene is monitored with the help of the data compiled, which is published in monthly reports comprising data on traffic accidents reported to insurers in the preceding month. Moreover, road safety research is supported by grants and research contracts.

Road accidents are investigated by appointed road accident investigation teams, which usually comprise a member of the police, a vehicle engineer, a road specialist and a physician, all working as part-timers. The teams investigate all fatal accidents on the scene of the accident, using a standardised method devised for the purpose. The data is worked into an accident database of roughly 300 variables, which is available for researchers and co-operation partners. VALT compiles the information into
annual reports and preliminary reports, which are widely used by researchers. In the same way, insurers compile data on all motor claims paid, which are also published in an annual report and used to promote road safety work. The database contains about 2½ times the number of accidents recorded in official statistics. Many researchers use both of the databases kept by the VALT in their surveys. The data has resulted in more than 200 statistical reports and graduation theses, including 11 doctoral theses.

The data recorded by the road accident investigation teams is actively used for the promotion of road safety work. The team findings have prompted tens of legislative amendments and given a number of safety issues a visible position in public debate. For example, Finland was the only country to have obliged pedestrians to use safety reflectors in the dark. The accident data also played a part in the debate on Finland's present national traffic safety programme, not only in the press and other media but also in the Parliamentary committee that discussed the measures to be taken.

Based on the long work of investigation teams, Finland introduced a special law on the investigation of road and cross-country traffic accidents. The act came into effect on 1 October 2001. It authorises the road accident investigation teams to investigate accidents and to have access to certain confidential data recorded in the files. There is a new co-operation body, the Road Accident Investigation Delegation, which steers and supervises the operation, functioning within Finnish Motor Insurers' Centre, who (VALT) continues to maintain the investigations and keeps the accident database.

The most prominent outcome of the claims data is a survey on the safety of car models, which has now been made four times in co-operation with the University of Oulu. This Finnish data and the method used for analysing the data are also incorporated into the world wide SARAC survey which is supported by the EU.

Together with the other Nordic countries, Finns have been exploring ways of using insurance for the promotion of traffic safety. To this end, the four countries arranged a seminar on the topic in Tallinn in 1995, at the request of the OECD.

**France**

**Claude Tarrière**
Claude.tarriere@wanadoo.fr

**Qualification**

In the road accident field, there is no university degree as a prerequisite to be a judicial expert. There is also no specific study and no examination. But two years ago a project was defined to create a specific school for judicial experts training (novices and continued training for experts already at work). By chance, the first step will be made for road accident reconstructionists (in 2005).

**Certification**

Experts in most fields are certified by the Appeal Court for the area where they live or by the Cassation Court at the national level. Each of these Courts has a list of certified experts, classified under the titles automobiles, carrosserie (car body) or accidentologie. On the list published each year by the Fédération Nationale des Compagnies d'Experts Judiciaires (National Association of Juridical Expert Companies) you find 217 experts for automobile, 12 for carrosserie and only 3 for accidentologie. (There is a Company for each Appeal Court and one or two Appeal Courts for each region.) So the vast majority of the judicial experts are simultaneously experts for insurance companies or were working for them before.

To apply for certification, a new candidate has to fill out a docket describing his technical or scientific background and has to add letters of peoples (existing judicial experts for example) supporting his application. Once a year, a commission (half magistrates, half experts) examines the dockets and decides whether to accept or reject the candidates on the list. Up to now, such a certification used to be lifelong. But, according to a new law (n° 2004-130 on 11 February 2004), when the decree for application will be published, the certification will be granted only for two years (“probation system”). When that has expired, a commission (half magistrates, half experts) will have to decide whether to give the certification for 5 years and again 5 years later. The certification for the national list requires an experience of at least 3 years at an Appeal Court.

**Position in court**

In most cases the expert that has been hired by the judge for inquiry (he chooses the people he wants on the list), is the sole expert, but, depending on the complexity of the case, the expert can ask for 2 or 3 colleagues or for an expert of a different speciality, for example one having the competence to analyse a tachograph chart.

The way of proceeding depends on whether the expert is involved in a civil or criminal proceeding. In the latter, the expert works alone, without any contact to the parties, and for a time defined by the judge in relation with the task assigned. The average time varies from 2 to 4 months, but it could be 6 or 12 months for some peculiar cases. The final outcome is a written report (2 copies) given to the judge for the inquiry. The closure is the following sentence: “Nous attestons avoir personnellement accompli la mission qui nous a été confiée et certifions le présent rapport sincère et véritable.”
(We confirm that we have personally conducted the task assigned to us and certify that the report represents the best of our knowledge.)

In case of civil litigation, the expert works with all the involved litigant parties and their lawyers according to the respect of the contradictory principle. Any correspondence with a single party is fully forbidden and would cancel all the expert valuation. At each step, by means of an intermediary written report, he checks the agreement of the parties and sends this report to the magistrate in charge to follow the affair for the court.

At the end the expert, submits his conclusions to the litigant parties at least 3 weeks before he finishes the final report, after having answered to any question and remark received from every party during these 3 weeks. One copy of the final report is sent to each party and to the magistrate following the affair.

In criminal as well as in civil procedures, the weighting of the expert’s conclusions lies in the hands of the court. In some cases (about 3 – 5%) the president of the court convenes the expert during the judgement to explain his work and to answer to any questions from the president, the public prosecutor and the lawyers.

Apart from being hired by the judge (or sometimes directly by the public prosecutor), an expert can also be hired by a litigant party or an accused. The outcome is a private written report sent to the party and its lawyer, who decides whether or not to hand it to the court.

The court may fully ignore this private report, but it is one way to justify an appeal by giving new elements allowing new investigations and to obtain that an expert be hired. In such a case the expert hired by the court will necessarily be another than the one hired by the litigant party.

In any case, due to the strong position of the court’s expert it is rather difficult to convince the court otherwise, and the position of the private expert is rather weak, even if he is officially certified.

The certified expert doesn’t need to certify his testimony by oath. He has given this one time at the Appeal Court when he was certified and was put on the list. The exception is when he is called by the court during a judgement.

Working conditions

Most of the judicial experts for road accidents are automobile experts – accidentologists or reconstructionists are very few. Experts using numerical simulation are officially quite unknown. They were 3 or 4 three years ago, and now, thanks to ITRA (Institut Technique de Reconstruction d’Accidents), about 30 experts are using PC-Crash after having got specific training (between 3 and 9 days so far). See www.itra-expert.fr, just open now.

Judicial experts work as independents, most often alone and at partial time.

The payment varies according to the area. It is 76 € per hour (without VAT) at the moment in the Paris region, less in other regions. The funds are provided by the Public Treasury to each court.

In civil litigation, the litigant parties have to pay an advance on costs that lies in the range of 1000 – 3000 €, depending on the complexity of the case (as the judge sees it…). After one to three meetings and as soon as possible, the expert with the agreement of the parties proposes a work programme and a forecast for the total costs. On this base, the judge can ask for a additional payment in advance by the litigant. At the end, the insurance company and the litigant share the whole costs.

Working fields

Within the vehicular accidents field there is very few specialisation: about 93% of experts are classified as experts en automobiles, 6% for car-body and 1% as accidentologists. Sometimes, few automobile experts add a mention like “pneumatics and relation of vehicle to the road” or “electronics” etc. So, the capability to choose for the judge is very narrow.

Additionally, the expert may be hired by the public prosecutor in case of severe accident to assist the police at the scene. At this point we could mention that it is the normal practice inside the Val d’Oise department, on a voluntary basis, after a common initiative taken about 8 years ago between a public prosecutor and the ITA experts association.

Associations, institutions, activities

As already mentioned, there are two general organisations gathering the judicial experts: 11005 peoples (distributed in the different Appeal Courts) inside the “Fédération Nationale des Compagnies d’ Experts Judiciaires” and a company for each Appeal Court.

Each of them organises some training sessions either very general (all specialities together), or sometimes specific to a peculiar speciality. They are also the representatives near Appeal Court or other jurisdictions as well as near the Ministry of Justice or the Government to follow or initiate evolutions of relevant laws.

ITA (Institut Technique d’Accidentologie) is a private association trying to improve the qualification of the expert by technical one day workshops with the help of car manufacturers and suppliers. Once every 18 months as an average, ITA organises also a large and professional symposium on interesting questions. The last one was on “drugs and road accidents”, the next one will be on “roads infrastructure and accidents” will be held on march 2005 hosted by the Assemblée Nationale, our parliament.

Few words more about ITRA (Institut Technique de Reconstruction d’Accidents), the only body trying to establish an accident reconstructionists’ network in a country where a lot is still to do, due to the absence of university courses on accident reconstruction. Our approach to the problem is to develop the use of numerical simulation and to offer more training sessions for novice experts, average users and more experienced groups (in regard to numerical simulation). Doing so, we would like to enlarge knowledge in regard to the exact unfolding of an accident, better estimation of EES and correct impact speed calculations.

A very positive hope for the development of a better judicial accidentology is founded on two strong accidentology teams entirely devoted to research and existing for 30 years. One works for the administration through INRETS, the other for car manufacturers through LAB (Laboratoire d’ Accidentologie, de Biomécanique et d’ étude du comportement des conducteurs – Laboratory for Accidentology, Biomechanics and the Research of Driver Behaviour). Both institutions published their results extensively in various journals and congresses.

It is easy to understand how helpful an European co-operation would be at a time where things have come into a move regarding accident reconstruction in France.
United Kingdom

Richard Lambourn
rlambourn@trl.co.uk

Adversarial Legal Systems

The English legal system, properly called The Common Law, is “adversarial” in nature. One party – the Prosecutor in a criminal trial or the Claimaint in a civil trial – presents his case to the Court, and then the other party – the Defendant – responds by presenting his case. The Court – either a judge alone or a jury of ordinary people – then considers the evidence and gives its verdict in favour of one party or the other. The Court does not, except in very very rare circumstances, call its own witnesses to give evidence.

England, Wales and Northern Ireland all have Common Law legal systems, as do nearly all British Commonwealth countries and former colonies (including Eire, the USA but excluding South Africa). Scotland has a different system, but it too is adversarial.

In an adversarial system, each party (or “side”) can have their own expert, and because of this, it is quite usual for there to be two experts with somewhat differing opinions giving evidence to the Court.

The Status of Expert

An expert giving evidence to a British court is permitted to give his opinion on the issues which the court has to consider, but only on matters which are outside the knowledge or experience of ordinary people.

There is no official system of certification of expert witnesses in the UK. In theory it is for the judge to decide on each and every occasion when a person comes forward as an expert whether that person actually is an expert. He can decide that a person is not an expert, and can refuse to allow him to give evidence. One side in a case can also challenge whether the other side’s expert is indeed an expert, and a judge might then be persuaded not to grant them expert status. Such refusals are, however, unusual, and most judges will listen to a person’s evidence and then decide afterwards whether to believe it or not.

Because there is no official certification, anyone with suitable diplomas, degrees, memberships of professional bodies and/or experience of working in a particular area of knowledge can put himself forward as an expert. To be accepted he first has to convince the lawyer representing one side in a case that he is an expert (usually not difficult to do); later he will have to convince the Court. Once at court, he has to show that he is at least as good as the other side’s expert, and this is where most non-experts get into difficulties. However, if he is sufficiently self-possessed or is a good actor, he may succeed.

But if the person works for an established organisation or company which has a specialist expert witness function – for example the Forensic Science Service, Forensic Alliance, one of the Scottish police laboratories, or the Transport Research Laboratory – the court will immediately accept them.

Accident Reconstruction Experts in the UK

Most accident reconstruction (AR) experts in the UK fall into one of three categories: persons with university engineering or science degrees who have studied AR informally; police officers working in specialist units who have been trained on courses set up by the police; and retired police specialists who carry out independent investigations.

There is sometimes friction between the first and the second and third groups: the first regard the others as having only a shallow education and a poor understanding of the science behind what they are doing; the others regard the first as having little or no real experience or understanding of what happens in real road accidents. The more sensible in all groups realise that the others have insights which they themselves do not have, and are prepared to cooperate and learn from them.

The situation is very similar in North America and Australasia, although there is probably more friction between the groups in the USA.

Most AR experts are single self-employed individuals, and many of them are retired police officers. There are only a few larger consultancies\(^a\) and companies\(^b\).

Expert Registration & Qualification

There is no pressure in the UK to introduce an official certification of expert witnesses. However, there has been set up, with initial funding from the Government, a body called the Council for the Registration of Forensic Practitioners\(^c\) (CRFP). It is intended that registration with the CRFP will give judges confidence that a person is an expert, but more than that, it is “to promote public confidence in forensic practice in the UK” following a number of cases in which poor and misleading expert evidence was given in the criminal courts, leading to a number of miscarriages of justice. The CRFP, therefore, is at the moment more concerned with criminal rather than civil law.

To become registered, the applicant indicates the field of expertise for which he wants to be considered, submits an account of his education, the professional bodies of which he is a member, and his experience. He gives the names of two referees, and provides a list of all the cases on which he has worked for the previous six months. A specialist Assessor examines all these, and in particular between two and six cases from the list. He then either approves or disapproves the application. If he approves, the process is ratified by a non-specialist, and, all being well, the individual is registered. If he disapproves, there is an appeal process.

Registration lasts for four years, after which the process must be gone through again (although the Register is not yet four years old, and the full re-registration process has not yet been made clear). The fee for getting on and staying on the Register is £130 (approx. 185 €).

There are two parts of the Register which concern accident investigators: “Science – Incident Reconstruction”, being for individuals with university degrees or similar qualifications (for which I am an Assessor); and “Road Transport Investigation – Collision Investigation/Vehicle Examination”, which is intended mainly for specialist police investigators.

The Register has yet to become widely accepted. Looking on the CRFP website, I see that under “Science” there are only two persons registered, one as a specialist in accident reconstruction, the other as a tachograph analyst, while under “Road Transport Investigation” there are ten.

More favoured by accident investigators is membership of a professional association, and in particular the Institute of Traffic Accident Investigators (ITAI)\(^d\).
ITAI has two levels of membership: Affiliate, which is open to anyone with an interest in accident investigation but which is not a qualification, and full Member, for which an applicant has to give evidence of a suitable background of education and experience (including two years as an Affiliate), two sponsors, two case files (chosen by the applicant), a record of “Continuing Professional Development” (CPD) (which means attendance on courses, at conferences, private study etc., of which only 18 hours/year are currently required), and a 2500 word essay about their two case files and what they learnt from doing them. Full Membership does not expire, but Members may send their CPD records to ITAI each year, for which their names are placed on a list on the ITAI website. They then become entitled to use a special badge on their reports:

ITAI has about 500 Affiliates and about 250 Members, of whom 49 have CPD listing. All Members can put the letters MITAI after their names. Membership costs £52 (approx. 75 €) a year.

ITAI also holds a large conference every two years and occasional smaller meetings and crash test events. Members particularly exchange views on the RTA Investigators forum although this is not officially sponsored by ITAI.

British professionals love to have a string of letters after their names: if I choose to I can write MA DPhil CSci CPhys MInstP MITAI MSAE after mine! But membership of an professional engineering or scientific association, such as the Institution of Mechanical Engineers, the Institution of Civil Engineers, the Institute of Physics, is important to university educated AR experts, since it brings with it the labels of Chartered Engineer (CEng) or Chartered Scientist (CSci), and these are generally guarantees of good technical, if not practical, ability.

**Accident Reconstruction Training**

There are no university degrees or diplomas in AR. The police are trained either by their own training establishments or by a private company, AITST, with certification being granted by a body called the City & Guilds of London Institute. The academic standard of these courses is not very high, covering only a very basic knowledge of dynamics, but they do emphasise practical AR skills. AITST also runs a slightly more demanding course which extends the City & Guilds syllabus, and which is certified by De Montfort University.

**Experts in Court**

Several months before a trial in a civil case, the parties have to obtain a judge's permission to use expert evidence. The judge's concern is to limit the costs of a case, both in its preparation and of the trial. He may be asked to allow more than one expert on each side (for example, an AR expert and a metallurgical expert). If he agrees (and he does not always), he will set a timetable giving dates when each side must disclose their experts' reports to the other side. He will also require the experts to then have a private meeting (without lawyers) at which they discuss their reports and from which they must prepare a joint report setting out their agreements and disagreements. This joint report may clarify things sufficiently to remove the need for the experts to attend the trial.

But in smaller civil cases the judge may order that there be a “single joint expert”, who advises all the parties in the case. The judge does not choose the expert: the parties have to find and agree on the expert themselves. This is a relatively new procedure in English law, and does not sit well with the adversarial trial system: the hope is that there will be no need for the expert to go to the trial, but when he does, whose witness is he?

In criminal cases the use of experts is freer. The judge does not limit it beforehand, and the only restrictions are that the prosecution must disclose their expert evidence well before the trial, whereas the defence need only do so a short time before. But each side's experts can make additional reports in response to what the other's has said. There is no rule that experts must meet privately before a trial, but sometimes a judge will ask for it to be done – and sometimes during the course of the trial itself!

There are no official fee rates for the payment of experts, although when a litigant is publicly funded by the Legal Services Commission they will set a maximum total amount which they will pay (usually not enough). Experts state their fees in advance, and the client either accepts them or does not. With many experts it is a matter of pride to set a high rate – say £120 or 170 € an hour – but when they make up their bill, they will often reduce the number of hours (unless they are attending court, when the client can see for himself the number of hours which have been worked – this makes going to court quite lucrative for some!).

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| a | for example, www.burgoynes.com and www.rbhawkins.com |
| c | www.crfp.org.uk |
| d | www.itai.org |
| e | RTA_Investigators@yahoogroups.com |
| f | www.aitsuk.com |
| g | www.city-and-guilds.co.uk |
| h | www.dmu.ac.uk |
Germany

Wolfgang Hugemann, wolgang@hugemann.de

Qualification

A university degree, either in mechanical engineering or physics (or comparable faculties) is a prerequisite for an officially certified reconstructionist. It takes about 5 years to get the university degree. A degree from universities for applied science (Fachhochschulen) is also accepted, normally taking 3½ years to get. Furthermore, the certified reconstructionist must have been working in this field for at least 3 years. This may be lowered to 2 years where the special training in this area has been part if his studies. The same holds if he proves he has had an additional 2 years of work in the production, repair or technical check of vehicles.

Additionally, he must have driver’s licences for all kinds of vehicles, i.e. passenger cars, motorcycles and HGVs. (In practice, this is not taken very seriously.)

Certification

Experts in most fields are certified by the Chamber of Commerce (and Industry) responsible for the area where he lives. (In some working fields – excluding accident reconstruction – the Chamber of Crafts is allowed to certify experts.) This stems from a former time when being a certified expert was a part-time job, and was in fact an obligation that the society called for. The Chambers have an interest in guaranteeing quality in commerce and industry, and thus they took responsibility for the recruiting of qualified experts aiding jurisdiction in this respect. This is still the kind of certification most accepted in Germany.

During recent years, private organisations have made attempts to establish an ISO 9000 compatible certification. These attempts have failed so far as the courts are solely founded on experts certified by the well-established system are concerned. This is partially due to German legislation which obliges the court to prefer experts certified by the Chambers of Commerce.

In order to get the official certification one has to pass an examination that consists of three parts (for reconstructionists): a handful of written expert opinions which are examined by the commission, a written test and an oral exam. The commission mainly consists of three sound experts from the fields of reconstruction, jurisdiction and vehicle technology. The chairman of the commission is a reconstructionist, but the other two pose reconstruction, jurisdiction and vehicle technology. The chairman of the commission is a reconstructionist, but the other two pose

Position in court

In most cases the reconstructionist is hired by the court, not by one of the litigant parties, and there is therefore only one joint expert in the trial. The proof by expert opinion is one of the five basic means of proof, both in civil litigation and public prosecution. In civil litigation, expert testimony is normally given solely in written form. Additional questions by the litigant parties are posed in written form and also answered that way. A (final) oral examination of the expert happens in about 5% of all cases.

Besides that, a litigant party or an accused may directly hire an expert to give a written opinion. The outcome of this may be kept secret; there is no obligation to reveal negative results to one’s opponents. But in cases where the written opinion is handed out to the opponents, it has to be complete, and cannot be restricted to just the positive parts.

Private expert opinion is most often consulted during the preparation of a possible trial or appeal, in order to gather ammunition or in order to calculate the process risk more accurately. Besides this, experts may be asked to check the written testimony of the expert hired by the court. But due to the strong position of the court’s expert it is rather difficult to convince the court otherwise, and the position of the private expert is rather weak, even if he is officially certified. Like a normal witness, the expert may be asked to certify his testimony by oath (though this rarely happens). The officially certified expert may then refer to the general oath he has given at the Chamber of Commerce.

Working conditions

Most reconstructionists work as independents in small offices, usually consisting only the expert himself, a secretary and (possibly) a technical assistant. An office uniting a handful of reconstructionists is already considered to be one of the “bigs”. An exception is DEKRA Ltd, employing about 150 full-time reconstructionists. These are not officially certified but are generally accepted in court.

The payment of reconstructionists is settled by law and is 75 € per hour at the moment. For a private expert opinion, an hourly charge may be settled freely and normally lies in the range of 100 – 130 €. In civil litigation, the litigant parties have to pay an advance on costs that lies in the range of 1000 – 2500 €, depending on the complexity of the case (as the judge sees it...). This advance normally gives the “anchor” for the final bill. The amount is not directly tied to the claim, but the judge will tend to foresee higher expert costs in case of a large claim. Practically speaking, expert testimony is most often a mixed calculation: there are cases in which one makes good money and they finance those in which one makes poor money.

It is comparatively easy to initiate a lawsuit in Germany; there are neither restrictions on the minimum account to claim nor on arbitration to pass in advance. Fault is generally divided between the “participants” of an accident and as a consequence, each of them has to come up for parts of the repair costs on his own. This situation breeds lots of lawsuits concerning traffic accidents – and legal insurance does the best to light that fire higher. Therefore, reconstructionists are not in fear of running out of money in the future.

Working fields

Within the field of vehicular accident reconstruction there is now further specialisation. The certified expert is obliged to accept any case falling into the field he is certified in. This includes: vehicular accidents, technical proof of insurance fraud, biomechanical loading during impact (in regard to whiplash injury), insecure...
loads, defective traffic surveying devices, nullification of sale because of (claimed) technical deficiencies, technical examination of vehicles after accidents – but the calculation of repair costs is the working field of another kind of expert. Additionally, the reconstructionist maybe hired by the public prosecutor in case of severe accidents to assist the police at the scene.

Associations, institutions, activities
The members of EVU Germany are mostly sole reconstructionists. Besides that, there are several organisations that mainly address experts for damage calculation but also host some reconstructionists, like BVK, BVSK. For those mainly interested in accident reconstruction, these organisations are of minor interest. The Chambers of Commerce maintain an institute for further training (IFS – Institut für Sachverständigenwesen) which addresses experts in all of the some hundred certifying fields. What they have to offer in regard to accident reconstruction is poor.

The yearly European conference of the EVU and the also the yearly crash test convention of the Arex-group are the only steady institutions for further education. Seminars explaining the basics of accident reconstruction to novices rarely exist. The Universities of Berlin and Munich hold courses on accident reconstruction, as well as Fachhochschule Osnabrück and Cologne. The diploma work of the students is the most important source of research work in the field of accident reconstruction. Genuine university research (like Kühnel’s investigation into the pedestrian accidents) no longer exists.

The monthly journal Verkehrsunfall und Fahrzeugtechnik (Vehicular Accident and Vehicle Technology) is the main platform for knowledge exchange, although its level seems to be degrading. Daily exchange of knowledge is offered by the e-mail forum de.groups.yahoo.com/group/Unfallrekonstruktion, founded in 1999 and very active ever since.

There is a remarkable amount of German literature regarding accident reconstruction or at least sub-fields of it. To the most, these books have aged. An overview on German AR literature may be found on the Internet: www.unfallrekonstruktion.de/deutsch.htm.

Greece
Jörg Ahlgrimm, joerg.ahlgrimm@dekra.com
Dr.-Ing. Elias Georgiadis elias.georgiadis@dekra.com

Qualification
In Greece, there are no official rules or professional prerequisites for becoming a reconstructionist. If a reconstructionist is consulted, his professional competence is a decisive criterion for selecting a certain expert. However, this criterion can hardly be treated seriously as the number of reconstructionists in Greece is very small. Thus, choosing an expert depends mostly on the individual opinion of the ordering party.

Education
Reconstructionists deals with both technical surveillance of vehicles (which was established with the help of the then TÜV Bavaria) and damage calculation. In order to become a reconstructionist in these fields, one must hold a university degree of a technical faculty or a qualification as craftsman in vehicle technology.

There are no faculties for vehicle technology (let alone accident reconstruction) at Greek universities. The universities of Athens, Saloniki, and Patras do have departments of Transport; yet, these belong to the faculties of civil engineering. Thus, traffic routes, planning of roads, and statistics play a dominant role.

In the whole of Greece there are less than 20 accident reconstructionists, most of them working in the field of damage calculation. Some of the reconstructionists (who are mainly based in Athens or Saloniki) studied mechanical engineering or vehicle technology in Germany.

Certification
Reconstructionists can apply at public prosecution authorities or courts to be accepted on a list of reconstructionists. Acceptance depends on the qualification of the applicant: the reconstructionist has to explain and to prove how he was trained – mainly in the fields technology and transportation. If the applicant is accepted, he can be hired by courts or by the public prosecution authority. This also applies when he is hired by the police who investigates by order of the public prosecutor.

Reconstructionists have to apply at every single court or prosecution authority they would like to work for; there is no central superior institution where they could apply for general acceptance. These applications primarily serve for the purpose of getting on the list of reconstructionists; they are not meant as a test of the qualification of the applicant.

Usually, reconstructionists are not accredited officially. On request (of the litigant parties), reconstructionists can be put under oath.

Position in Court
Accident reconstructionists mostly work in civil litigation. This is due to the widespread exorbitant compensation claims in case of fatalities. Therefore, experts are hired by lawyers before a trial
in order to estimate the possibility of success on the basis of the accident in question. Experts are called by the court; however, they are hired by one or both litigant parties. Testimonies of the experts are handed in written form.

Party representatives will usually verify the qualification of the expert called by the court. Reconstructionists with a university degree or with pertinent practical experience are generally preferred.

If the party reports disagree, the court hire a third, neutral expert.

**Payment of Experts**

For reports carried out for the police and the public prosecutor, a reconstructionist gets between 150 and 250 Euros. The scope of these reports often is very limited; mostly, they deal with technical influences or questions of speed.

For reports carried out for private persons, lawyers or insurance companies, fees and expenses are negotiated by the reconstructionist and the ordering party. If the result of the report is to the disadvantage of client, it is often very difficult for the expert to get paid appropriately.

Reports for parties in civil litigations are paid when handed out to the parties. In other cases, the reconstructionist has to wait very long for his money as the courts only pay quarterly. In addition, reductions of the reconstructionists' invoices are quite common.

Experts determine their fees according to their expenses, not according to the size of the case. In civil litigation, lawyers get – if they succeed – 10 percent of the compensation sum.

**Work of the Police**

The police is responsible for saving evidence after an accident: accident spots are photographed and accident sketches drawn. The latter are normally not drawn to scale, and road curvage is rarely displayed correctly. Sometimes, the results of measurements are included. This is an important basis for the work of the reconstructionist.

The police uses outdated material to “reconstruct” the speed. Courts follow these reports quite often.

The results of these police reports quite often have mistakes. It is very difficult and often futile for the litigant parties to argue against them. It is of great importance for the accident reconstructionist to display high competence and excellent qualification to convince the judge.

**Associations, Institutions, Activities**

In Greece, there is no professional body or an organisation of reconstructionists. The state does not support the initiation of a system of accident reconstruction, nor are there any measures to ensure and verify qualification.

Greece's accident reconstructionists are based either in Athens or in Saloniki. This implies they have to travel a lot, as a lot of accidents take place on the Greek islands.

In 2004, DEKRA founded associated companies in Greece (DEKRA Hellas and DEKRA Automotive Tsobanidis), both based in Saloniki. These two companies offer damage calculation, accident analyses, DEKRA signets, and security checks. Furthermore, partnerships with reconstructions who studied in Germany were contracted.

The qualification of the reconstructionists is supported by DEKRA Germany. Further information can be found at www.dekra.gr.
Hungary

Dr.-Ing. Zoltán Lovász
lovaszkft@axelero.hu

Qualifications

Prerequisites for an career as a reconstructionist are at the moment: no previous conviction, a university degree in the according faculty and a minimum of 5 years of practice in the field. If an according university degree does not exist, a secondary school degree with 10 years of practice suffices.

In former times, reconstruction experts employed by governmental organs had to pass an examination at the start of their work. A significant part of the part time experts was registered before the political turn – without special studies and qualifications. After the political turn, the decree on experts (as released by the Ministry of Transport as the supervision organ) has been altered. According to the new decree, accident analyses may only be carried out by experts who have taken part in the according engineering courses at the Faculty of Traffic Engineering at the Technical University of Budapest.

This means, that due to the – somewhat arbitrary and strict – interpretation of the decree, the prerequisites are: a university degree (5 years of studies), post-graduate engineering studies (2.5 years) and 5 years of working in the field.

(Within the circle of experts, there is a demand for correct forms of education and examination as an alternative to the post-graduate studies, which are time-consuming an expensive. At the same time, also the continuity of the post-graduate course is appreciated, so that the reconstructionist may choose his personal way of education.)

I would also like to mention that the expert’s professional and otherwise qualification is also examined by other forums; I will explain this in more detail in the following part.

Certification

At the request of the expert candidate, he will be put on the experts lists that is edited by the Ministry of Justice. After a check that he has never been convicted and that he is a member of a trade association (for instance the chamber of engineers or the chamber of physicians), the Ministry of justice will call for opinions about the expert

• from the territorial responsible chamber of court experts
• from the territorial responsible court
• from the ministry that is responsible for supervision of professionals.

By means of this information, the minister will than decide to accredit or reject the candidate. Accredited experts, i.e. those with a register entry, are obliged to apply for membership in the territorial responsible chamber of court experts (because only members of the organisation are allowed to appear at court).

According to the current regulations, the registration of the expert is of unlimited duration. Experts use a stamp which does not follow any defined design rules.

During the procedure, the expert acts either as an expert (if he is accredited, regardless whether he is employed by a governmental institution, working independently or just a part-time expert) or as a so-called casual expert (without registration).

According to the current rules, accredited experts are not obliged to undergo further training (though there is a brisk demand, as the wide-spread participation in voluntary training courses shows).

Still after accession to the EU, the regulations considering the position of the forensic expert are under responsibility of the single state. The certification tentatively introduced 4 years ago for car experts (including reconstructionists) has been very popular amongst the experts, but it has never been officially accepted and not even supported by the chamber of forensic experts. One reason for the interest may have been a demand for a qualification procedure putting less financial demands on the apprentice. On the other hand, the problem arose that the prerequisites regarding the professional education were not checked.

Position of the expert

At the moment, about 4500 experts are registered in the list edited by the Ministry of Justice, 20% of them being active (i.e. they are regularly assigned by the authorities). These experts are mostly engineers (nearly 50%), including vehicle experts and amongst them the reconstructionists.

Reconstructionists are mostly assigned by the authorities, private mandates occur quite seldom, though they are permitted according to the principle of free evidence.

The expert’s report is a possible mean of proof and has to be taken into account as such, in criminal as well as civil proceedings. Export testimony is usually given in written form and may be complemented either in written or oral form. In criminal proceedings, summons of the expert are more common than in civil proceedings.

Private experts are assigned by the litigant party or the defendant in order to prepare the trial or to check a written report that has already been given. At the moment, the position of the private expert is rather weak in comparison to that of the court expert. Since the code of criminal procedure has been altered, the defendant or his attorney may tell the public prosecutor that he wants to have an expert at the trial. The expert hired that way can take part in the proceeding, if the court and the public prosecutor accept this.

If the court has difficulties to understand the report or it contains contradictions, that may not be eliminated by an oral examination of the expert, another expert is assigned. In case that there are already multiple and contradictory expert opinions in the trial, the civil court will call for a superior expert commission. (This is assigned exclusively with the task to explain the contradictions, not to give a new report.)

If there are contradictory expert opinions in a criminal proceeding, an additional expert may be hired to explain the sources of contradiction. He may also give advice how one of the reports has to be complemented, or whether a completely new report should be given on the case.

In criminal proceedings, the defence may also apply to replace the proposed expert during some time interval after the reading of the charge. The court has to allow this request.

The experts has to identify himself as such by his expert identity card. After having been advised about the consequences of false testimony, he is heard by the court.
Working conditions
The labour legislative environment of the forensic expert's work is very heterogeneous. Most experts work part-time as such and thereby make use of the infrastructure of their employer. Many experts are employed by the institutes of the Ministry of Justice. Compared to other EU states, independent experts are not very frequent. Those work as single persons or pensioners as they are not allowed to unite to expert offices or corporate enterprises.

Regarding remuneration, the situation is rather bad. The (official) hourly charge for vehicle experts is 1600 HUF + 35% lump sum costs + VAT (1600 HUF are about 6 – 7 €). The absurd contemporary situation is unbearable, even if the expert could charge two hour per day. (According to law, an additional factor of 2.5 is allowed in exceptional cases.) The lump sum costs comprise (unrealistic low) costs for photocopies, photographs and travelling expenses. The amended code of civil procedure offers the possibility to settle the costs prior to the assignment of the expert.

Working fields
Mandates to an expert can comprise the following tasks and problems:
• at-spot investigation of the accident (saving of traces, technical check of the vehicles, investigation on conspicuity)
• biomechanical loading (usually together with a expert physician)
• investigation on technical failures as a possible accident cause
• damage calculation
• vehicle identification, appraisement of vehicles
• technical investigation of insurance fraud
• appraisement of vehicle repairs
• investigation on vehicle loading and load fixation

Miscellaneous
The majority of vehicle experts are members of the EVU Hungary and take part in the further training that has been organised by EVU Hungary and the IbB for years. (IbB is a German franchise corporation regarding accident reconstruction.)

Some reconstructionists (their amount is growing continuously) take part in conferences abroad (EVU, AREC, DEKRA, MAS, DSD, IbB, etc.).

Additionally, the developers of accident simulation software organise seminars, though their prices are considered somewhat steep (especially for the up-to-date versions). In Hungary, we use the following programs: Carat, PC-Crash, Analyzer, IbB’s additional modules, etc.

The journals “Verkehrsunfall und Fahrzeugtechnik” respectively “ATZ” (Automobiltechnische Zeitschrift) are read on a regular basis. An independent Hungarian journal still has to be founded, but the journal of the national chamber of experts may allow exchange of experience.

Concluding remarks
The situation of the vehicle experts is characterised by an extreme amount of problems arising from the 15 idle years since the political turn. This may have been illustrated by the facts mentioned in this text. Perhaps, the problems originate from the fact that reforms in jurisdiction have left the expert sector unchanged (for what reasons ever). The Ministry of Justice is plan-
Ireland

Dr. Denis Wood

Qualification

In this paper I outline the background of technical experts who prepare reports and give evidence to the courts in the Republic of Ireland in vehicle accidents and related matters.

The level of qualification ranges from that of engineering technician/draughtsman or motor mechanic to university qualified engineer and membership of an engineering institution with a Chartered Engineer status. Physicists also on rare occasions, provide expert advice in this area.

Certification

The courts determine whether or not an expert is, in the opinion of the court, suitably qualified to give evidence to the court in the specific case before the court.

Position in Court

The majority of work is for civil cases. About 5% of work is for criminal matters. The courts do not appoint an expert. The parties to each case appoint their own expert. This expert may or may not be used to give evidence. In the lower courts each party does not know if the other side have retained an expert until he/she appears in court. In High Court cases if either side intends to rely on expert evidence then the expert’s report must be given to the other side some weeks before the hearing (report exchange). In giving his/her evidence (and in their report) the expert is required to be impartial and at the service of the court.

About 30% of cases settle before court. The remainder go to court. Of these, the majority settle in the court building without a hearing in front of a judge. The balance, about 5% to 10% go to hearing in front of a judge.

In the lower courts cases take about ½ a day in front of the judge. In the High Court cases, even ones involving paraplegia or similar very serious injury, the cases normally take 2 days.

In criminal cases the police, in general, use their own staff. On rare occasions an independent expert is used. The defence use an independent expert whose fees are discharged by the state.

Working Conditions

The majority of practices are sole practitioner with support administration staff. A small number of offices have 2-4 professional engineers/scientists.

Fees are responsibility of the party who engage the expert. However in Irish Civil Law the party who loses the case, i.e. the party which makes the financial settlement, is responsible to pay the “reasonable fees” of the other side.

Working Fields

The type of work carried out for road traffic accident cases varies from a simple map of the accident area through vehicle design issues to complex accident reconstruction, study of biomechanics and investigation of the contribution of the road design and construction and hence the liability of the road authority for the accident.

The range of expertise also varies greatly, from the qualified mapper, professional civil engineer or architect, motor mechanic, motor assessor to professional mechanical engineers who are Chartered Engineers.

The number of road accidents that have in depth accident reconstruction carried out is small. This is due to the limited expertise of many of those involved and the restricted collection of information by the police.

Associations, Institutions, Activities

Each professional is normally a member of a professional body, for Chartered Engineer this would typically be the Institution of Engineers of Ireland or the Institution of Mechanical Engineers or the Institution of Civil Engineers. There is a grouping of Chartered Engineers who specialise in investigation work of all types, “The Association of Forensic Engineers”. It has about 60 members. Investigation of road accidents constitutes a small portion of the typical members activity. Seminars on aspects of road accident investigation take place every 4/5 years.
There are no ethical rules that force the expert to say what really happened without hiding negative aspects and without forcing, even if only partially, interpretation of objective elements.

Sometimes the private expert opinion is asked during the preparation of a trial, to decide the best defence, or before start a civil litigation to verify which are the process risks.

Experts may be asked to check the written testimony of the expert hired by the prosecutor or by the court. Even though the court’s expert or the prosecutor’s expert has a stronger position than the private expert, it is possible to convince the court otherwise (but obviously it is necessary to have very good and provable reasons), specially in the criminal procedure where the expert can directly expose his/her own reasons to the judge. More complex is to convince the court otherwise in civil litigation (but normally it depends on the judge) where the testimony is written.

Like a normal witness, the expert may be asked to certify his/her testimony by oath. However the oath concerns only the objective data and not the expert evaluations.

Working conditions

Normally, the reconstructionist works as a free lance in small office. In some cases he/she is supported by a technical assistant and/or by a secretary. It is not so rare that a reconstructionist, specially if he is an engineer, works as an expert in many other different fields (not concerning vehicles).

The reconstructionists’ fare, when working for court and prosecutor, is settled by law. The unit of work is called “vacazione” and it corresponds to 2 hours. At present the fare is 14.68 € for the first vacazione and 8.15 € for each following vacazione.

Obviously, in order to obtain a proper income, reconstructionist needs to declare, at the end of his/her work, that his/her fee is equivalent to a large amount of vacazioni (for example a fee of about 170 vacazioni, the equivalent of 340 hours, corresponding to about 1400 €). In any case the prosecutor or the judge can decide to pay the expert less than demanded by the expert.

For a private expert opinion, the fee normally lies in the range of 1000 – 2000 € (depending on the complexity of the task).

In civil litigation, normally the litigant parties have to pay an advance on costs (the amount of the deposit is settled by the judge). Also in this case the expert, at the end of his work, can ask for a fee that the judge will not necessarily approve. In civil litigation the fee normally lies in the range of 800 – 1700 € (depending on the complexity of the task).

Working fields

At the moment each expert can work in every field without distinction, i.e. vehicular accidents, technical proof of insurance fraud, biomechanical loading during impact (in regard to whiplash injury), insecure loads, defective traffic surveying devices, nullification of sale because of (claimed) technical deficiencies, technical examination of vehicles after accidents.

In theory the evaluation of repair costs is now working field of another kind of expert (periti assicurativi, or insurance expert). To evaluate repair costs for insurance company it is necessary to pass an exam and to be enrolled to the insurance experts roll (an official list).

Associations, institutions, activities

At the moment there is nothing of interest in Italy concerning accident reconstruction.
The only way to have education seems to be to attend seminars and conferences organised by European associations or organisations. However AREC Conference is usually attended only by a few Italian reconstructionists and only a few reconstructionists are associated to European associations.

There aren't publications regarding accident reconstruction like, for example, the German journal Verkehrsunfall und Fahrzeugtechnik.

There is no literature concerning accident reconstruction that could be compared to the European literature.

Latvia

*Sate Forensic Science Bureau
oskars.irbitis@vteb.gov.lv

Qualification

A university degree or second level professional university degree, in technical engineering is a prerequisite for an officially certified reconstructionist. It takes about 4 years to get the university degree. Furthermore, the certified reconstructionist must have working experience in this field for at least 1 year. Reconstructionist also needs some skills in work with computer and knowledge of foreign language (Russian, English, or German). Additionally, the driver’s licence for passenger cars is required.

Certification

In Latvia there is only one institution (State Forensic Science Bureau) that certifies auto technical experts in four specialities (Investigation of vehicle technical condition, Investigation of vehicle collusion mechanism, Investigation of vehicle collusion mechanism with pedestrian). The State Forensic Science Bureau has an interest in guaranteeing quality of experts work, and thus they took responsibility for the recruiting and practise of qualified experts. Currently working group is drawing up a new act that will establish rules of expert’s certification.

In order to get the official certification one has to pass an examination that consists of two parts (for reconstructionists): at least 5 of expert written opinions that are examined by the commission and oral exam. The commission consists of 5 certified experts. The structure of commission is approved by Ministry of Justice of the Republic of Latvia. The chairman of the commission can invite representative from police, prosecutor’s office, court and other science institutions.

Having passed this examination, the newborn expert receives the right for the signature. He has to give an oath that he will always give unbiased testimony to the best of his ability. The certification has to be renewed every five years.

Position in court

The State Forensic Science Bureau that is connected with law institutions hires the forensic expert. The forensic experts have a duty to take part in court process. In some cases forensics experts are invited to the court to give answers for their conclusion, that’s needed when court have something unclear about expert conclusion. If the court wants to make expertise in court, then questions are posed in written form and also answered the same way.

Private expert opinion is consulted during the preparation of a possible trial or appeal, in order to gather ammunition or in order to calculate the process risk more accurately. Besides this, experts may be asked to check the written testimony of the expert hired by the court. But due to the strong position of the court’s expert it is rather difficult to convince the court otherwise, and the position of the private expert is rather weak, even if he is officially certified.

Like a common witness, the forensic expert is asked to certify his testimony by oath.
Working conditions

The forensic experts work in State Forensic Science Bureau office. All experts are certified. At this moment in Latvia there are only 5 full-time forensic experts. This small amount of experts is explainable by poor financing from state. The payment of forensic experts at this moment is approximately 1,7 € per hour. For a private expert opinion, charge for one conclusion lies in the range of 350 – 400 €.

Working fields

The certified forensic expert is obliged to accept any case falling into the field he is certified in. This includes: Investigation of vehicle technical condition, Investigation of vehicle collusion mechanism, Investigation of vehicle collusion mechanism with pedestrian the calculation of repair costs is the working field of another kind of expert.

Associations, institutions, activities

State Forensic Science Bureau cooperates with Riga Technical University. Riga Technical University helps to develop teaching aids and provide latest technical materials. Also some of our experts supplement their knowledge by studying at university and acquiring Master’s degree and Doctor’s degree in technical field.

Luxembourg

Jean-Pierre Koob, jean-pierre.koob@education.lu

Qualification

The prerequisites for an officially certified reconstructionist are not clearly defined. He should either have a university degree or a degree from a higher education institution in either mechanical engineering or physics (or comparable faculties). It would be beneficial to have specialised in the field of accident reconstruction by attending a special course at university or by writing a dissertation in this specialised field.

Certification

The experts are sworn in by the civil division of the Supreme Court of Justice and they are subject to control of the senior public prosecutor.

The official title for a sworn in expert is “Expert agréé et assermenté par la Cour Supérieure de Justice”!

In order to become a sworn in expert, people have to make an application to the Ministry of Justice. An excerpt from the criminal record, a curriculum vitae as well as a certified copy of one’s certificates should be attached to the application. The Minister checks if the certificates correspond to the stated qualification and if the person has sufficient experience in this specialised field. If the application is accepted, the expert is then added to the list of experts by ministerial decision.

He takes an oath in front of a chamber of the Supreme Court of Justice to write his expert’s reports to the best of his knowledge and belief.

Position in court

The accident reconstructionist can be hired by the court or by other parties (insurance companies, the accused) to give a reconstruction.

If the reconstructionist is hired by the court and not by one of the litigant parties, there is normally only one expert involved. If one of the parties raises an justified objection against the expert’s report, they have got the right to ask for a second expert’s report. If the examining magistrate puts an expert in charge of a report, the accused has got the right to ask for a coordinate expert.

When the litigant party or the accused hire an expert directly, the outcome of this may be kept secret. There is no obligation to reveal negative results to one’s opponents. But in the cases where the written opinion is handed out to the opponents, it has to be complete, and cannot be restricted to just the positive parts.

Private expert opinion is sometimes consulted during the preparation of a possible trial or appeal to calculate the process risk more accurately.

Besides private experts may be asked to check the written testimony of the expert hired by the court. However the position of the private expert is rather weak, even when he is officially certified.

Both in public prosecution and in civil litigation expert opinion is usually given in written form. In public prosecution the expert is nearly always heard personally.

Normally the expert is asked by the court to certify his testimony by oath.
**Working conditions**

In Luxembourg, only few native experts are solely employed as reconstructionists. Therefore the court and the insurance companies need the service of foreign experts. As French is the official (written) language in Luxembourg, Belgian experts are predominantly consulted.

At times, so-called "car experts" (expert en automobile) have to deal with accident reconstructions. As these experts are specialised in the field of assessment of damage and costing of damage and often they do not have academic qualification, they are normally not asked for complex kinetic or cinematic questions.

The expert's fees depend on the time that is spent on the work. The hourly charge is linked to the index (Index 100 Basis on 1st January 1948).

In case an accident reconstruction is asked for by an examining magistrate or the public prosecutors, the fee of an expert with an academic qualification of at least 4 years has been fixed by law at 8,25 € (51,2 € Index 620,75)

For a private expert opinion the hourly charge depends on the expert's education and experience and ranges between 60 € and 110 €. In civil litigation, the litigant parties have to pay an advance on costs to the court. This ranges between 250 € and 1000 € and is determined by the judge. The advance on costs is however most often to low and is nearly always exceeded. If the advance on costs is exceeded during the course of reconstruction the expert would have to stop work and ask for a new advance on costs. Often this regulation is bypassed, the expert informing the parties at the compulsory contradictory hearing about the presumed costs of the reconstruction.

**Working fields**

The reconstructionist is most often in charge of the following working fields: Course and cause of vehicular accidents, biomechanical loading during the impact, questions about who was at fault, defective traffic surveying devices being the cause of a crash. Furthermore a reconstructionist may be hired by the public prosecutor in case of severe accidents to assist the police in securing evidence at the scene of the accident.

Technical examination and calculation of repair costs is commonly not done by the reconstructionist, but is the working field of car experts.

**Associations, institutions and activities**

Reconstructionist and car experts are represented together in the "Section Transport et Circulation" (section transport and circulation) of the "Chambre des Experts du Grand-Duché de Luxembourg" (Chamber of experts of the Grand-Duchy of Luxembourg). This organisation represents the interests of the experts in Luxembourg and includes the group construction, transport and traffic, medicine and the group finances, art, science and technology.

The reconstructionist can currently get further education in neighbouring countries, especially in Germany. Furthermore a remarkable amount of German literature regarding accident reconstruction with its various sub-fields makes strengthening of knowledge possible.

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**Netherlands**

*Jan Meuwissen*  
*jm@mvva.nl*

**Expert business**

In the Netherlands, nearly every accident is recorded by the police. In case of a severe accident or an accident with unclear cause, a special police force is called to the spot (Technische en Ongevallen Dienst van politie = Technical and Accident Service). At this early stage, a reconstructionist will not be assigned.

The Technical and Accident Service also takes care of saving the traces comprehensively; all needed aspects are investigated and checked. The accident spot is being surveyed and photographed, the accident traces on the vehicles are documented. Furthermore, the Service is responsible for checking the vehicles for possible deficiencies causing the accident. If needed, the impact constellation is reconstructed at spot (or somewhere else) by putting the vehicles together. There are special units that conduct braking experiments (also with motorcycles) or evaluate tachograph sheets.

The Accident Service is capable of conducting all relevant investigations needed to reconstruct the unfolding of the accident. In order to perform this task, the Accident Service has excellent technical equipment. Many staff members already use programs like RolleiMetric or PC-Rect. In the near future, all branches will be equipped with these technical resources.

The training of the staff members is conducted by the Netherlands’ Police Academy (Politie Academie Nederland). The academy holds an educational branch that offers a special training in order to become a member of the Accident Service. Each member of the service has gone through this education. Furthermore, it is expected that staff members take further training, which is also conducted by the Netherlands’ Police Academy.

Having collected all needed (technical) information, the accident is reconstructed by the Accident Service. While doing so, easier calculations or collision mechanical considerations are undertaken. The conclusions and results are summed up in a protocol.

All members of the Accident Service have laid a general oath. Their lines of action and their warrants are settled by law.

More complex or difficult analyses are performed by the Netherlands’ Forensic Institute (Nederlands Forensisch Instituut – NFI) in Den Haag and are summed up in a separate report. The NFI is an institution that solely works for police, public prosecution or the court. The members of the NFI undergo a separate special training.

The (technical) protocol of the Accident Service and the possible report of the NFI found the basis for the consideration of the accident, either criminally or civil.

In most cases, a private reconstructionist is considered only after the police investigation and the report of the NFI. Therefore, the basis for further investigation always is the police protocol and the report of the NFI.

**Position in court**

**Public prosecution**

The public prosecutor or the judge may ask the NFI:

- to perform an analysis, if the police did not yet call for it
• to complement its analysis, if the police has already called for it.

Furthermore, an attorney or the court may hire a private reconstructionist in order to
• check the police protocol
• perform a new analysis or complement an existing one
• perform a technical investigation of the vehicles involved.

Civil claims
In civil claims, neither the police nor the NFI get active again. A private reconstructionist is assigned with the task to
• check the police protocol
• perform a new analysis or complement an existing one
• perform a technical investigation of the vehicles involved.

In a civil case, possible constituents are
• insurance companies
• the persons involved in the accident
• attorneys
• civil courts.

A private reconstructionist will conduct his investigation for his customer. This could be one of the litigant parties as well as both parties in common. The report is the basis for possible arbitration in respect to split of the costs.

If arbitration fails, a civil trial will follow in most cases. The judge may then call for a private reconstructionist, but not for the police or the NFI. The reconstructionist will be asked to lay an oath.

Qualifications
A private reconstruction office may only be run by permission of the Ministry of Justice. The Netherlands have regulations that settle the working permission and legitimisation of private experts. Among others prerequisites, an accreditation is needed. Any violation of these regulations is considered as an economic crime. For the office you also need a permission according to the data protection law (wet Bescherming Persoonsgegevens).

Beside this permission, the private reconstructionist has a university degree of the Technical University (technische hogeschule) of Arnhem, faculty of vehicle engineering with special courses in accident analysis, or he has a police education as a reconstructionist instead, which he has undergone at the Netherlands’ Police Academy.

Associations, institutions, activities
Most private reconstructionists are members of the EVU. Besides that, there is a national group, the VD group (VD-groep), which consists of representatives of private offices, of the NFI, of the Police Academy, of the Dutch Transport Safety Board (Raad voor de Transportveiligheid) and of insurance companies.

Concerning further education, most reconstructionists make use of the various publications in German. The monthly Journal “Verkehrsunfall und Fahrzeugtechnik” is read on a regular basis. Furthermore, reconstructionists take part in seminars mostly offered abroad. The most prominent of these are the annual conference of the EVU and the crash meetings of the AREC group.

Norway
Henrik Nesmark
nesmark@rekon-da.no

Qualifications
In Norway we do not as yet have any certification system for experts working with accident reconstruction. There are no official requirements for any special qualifications. Historically this type of work has been placed with employees of the Norwegian road authorities working on requests from the police. The road authorities are now in the process of developing a certification system for their employees. Experts covering the private accident reconstruction market are usually engineers with a university degree, either in mechanical engineering or physics. It takes about 3 – 5 years for a university degree. Some have a degree from universities for applied science (Fachhochschulen).

Certification
As stated above we do not have an official certification for accident reconstruction experts in Norway.

Position in court
In some criminal cases the court may nominate an accident reconstruction expert (this would often be an employee of the Norwegian road authorities, a department that takes care of road building, driving-licenses and the yearly inspection of cars). Otherwise the police would have already requested a report during the investigation of the case. Normally if the court wants to appoint an expert both parties would be asked to submit any objections before the expert is appointed. In some cases two experts might be involved depending on whether or not the opposing parties agree on one expert. However the general rule would be that the report requested by the police would be used as proof and the expert would have the status of “expert witness”.

In civil litigation, expert testimony is normally given in written form to the court and then complimented by the expert’s presence in court if necessary. Additional questions by the litigant parties can be posed in written form and also answered that way. An oral examination of the expert in court would often be required.

A litigant party or an accused may engage a private expert to give a written opinion. The outcome of this does not have to be revealed, (there is no obligation to document negative results to the opposite party). But in cases where a written opinion is tendered it must be given in full to both parties. It has to be complete and unbiased and cannot be restricted in such a way as to enhance what might be considered positive to one or other of the parties involved. However a private expert might only have a mandate to point out weaknesses in the opposing experts rapport.

Private expert opinion is most often requested during the preparation of a possible trial or appeal, in order to gather “munition” or in order to calculate the risk of going to trial more accurately. Besides this, experts may be asked to check or verify the written testimony of an expert hired by the court. Due to the stronger position of the institution of a court expert it is often relatively difficult to convince the court otherwise. The position of the privately engaged expert is often considered to be of less value, even though the private expert might have greater expe-
perience or is perhaps even better qualified. Like all witnesses, the expert will required to certify his testimony by oath.

Working conditions

Most accident reconstruction experts work in small independent companies, usually consisting only of the expert himself and perhaps a secretary. An office uniting a handful of accident reconstruction experts would be considered to a major player in the Norwegian market. In Norway there are no companies like DEKRA in Germany.

A general law covering the costs of work in the courts regulates the costs of accident reconstruction opinions in criminal cases. The current remuneration level for such work is today running at 93 € per hour. For a private expert opinion, an hourly charge may be settled freely and normally will be in at a higher level around 100-110 €. In civil litigation, the litigant parties have to pay an advance on costs that normally lies in the range of 1000 – 1500 €, depending on the complexity of the case (as the judge sees it...). This advance normally gives an indicator for the final bill. The amount is not directly tied to the claim, but the judge will tend to foresee higher expert costs in case of a large claim. Practically speaking, expert testimony economics is a mixed bag; some cases being well remunerated and others poorly. In the long run the better-paid cases are financing the poorly paid cases.

In Norway it is unlikely that small cases will ever come to a court trial. The insurance companies have developed several solutions to hinder the costs involved in litigation, one of them being a booklet that settles the split of cost for a large amount of template accident situations. Founding on this basis, the insurance companies will agree on a settlement regarding costs in most cases, and the insuree will accept this settlement. In case that he does not, he may go to court.

There are no formal restrictions on the minimum amount to claim or on arbitration solutions. When fault cannot be identified easily such cases normally end up in “fault sharing solution”. This normally means that the parties have to bare a part of the costs but the insurance companies pay the majority of the claims. The insurance companies have a common agreement between themselves that regulates the majority of all such cases.

This situation means that we have very few lawsuits concerning traffic accidents. Even though legal insurance is standard on all insurance policies, it is unusual to make use of it in cases without personal injury. Therefore accident reconstruction work is very limited in this area.

Working fields

Within the field of vehicular accident reconstruction there is little specialisation. Generally speaking independent experts receive perhaps 40% of their income from criminal work and 60% civil cases. Cases include normal determination of fault, calculation of speed at the time of the accident etc. The last few years has seen a greater interest for the technical proof of insurance fraud and change of speed and accelerations during impact (often whiplash injury cases).

Associations, institutions, activities

As yet there are no associations or institutions that are officially recognised in Norway. However, the few accident reconstruction experts working in this area are actively considering starting an organisation to have a greater impact in pursuing their common interests and to insure their future by setting up qualification standards.
Poland

Jan Unarski
junarski@ies.krakow.pl

Qualifications

Court experts are appointed by presidents of district law courts, who do not have any detailed regulations in this matter. In practice, however, a national standard has been established which requires the candidate to hold a university degree in mechanical engineering specialised in automobile technology or a close area. MSc degree is obtained following five-year course of studies. Among the practising experts there are also holders of diplomas of bachelors engineering courses (3 – 3,5 years). Moreover, the candidate is required to substantiate, in writing at least, his/her qualifications for the job such as professional experience, employment as a car mechanic or in technical check of vehicles, etc. In the Ministry of Justice there is an Institute of Forensic Research with a Department for Road Accident Analyses, which can be applied to in difficult or controversial matters.

The police also employs its own experts, though the number is rather small.

Non-court experts associated with organizations such as the Association of Experts in Automobile Technology and Road Traffic, the Polish Automobile Federation, or the Association of Transport Engineers and Technicians can also be appointed court experts. The requirements valid in these organizations are similar to those mentioned above, moreover they include a two year training as an assistant to a certified expert, and an internal examination (which used to be a state controlled examination). Also driving licence category B is required. The new regulations introduced recently require experts to hold a university degree, driving licence categories A, B, C, two year training and completed certifying procedure to be registered as experts for the Ministry of Transport. A new bill on court experts is being prepared at the Ministry of Justice. Among court experts there are sometimes university staff who if not registered as court experts are hired as such “ad hoc”.

Certification

Court experts are usually certified by their professional organizations, e.g. expert accountants, expert psychologists, etc. The role of such organizations is to guarantee their experts’ competence and high quality qualifications as well as observance of deontology by them, however difficult it might be in actual practice.

This is accepted by law courts. For the majority of court experts this job is an extra job, but for some it is the main source of income.

Recently court experts in automobile technology and road traffic have been encouraged to undergo the certifying procedure (ISO 9000, 45013). To this aim there have been appointed by the Polish Accreditation Centre (PCA) and are operating two certifying institutions, i.e. at the Association of Experts in Automobile Technology and Road Traffic, and at the Polish Automobile Federation. Some other institutions are applying for certification licence, and this is why PCA has set up a commission for establishing norms and certification minima to guarantee similar requirements and standards of experts.

It is recommended to appoint new court experts only after the certification procedure, although it need not be strictly observed. Certification has to be renewed every three years. Court experts use their stamps, with inscriptions of no set patterns.

Position in court

A court expert is only permitted to offer his service to the police, to public prosecutors or to courts. Most seldom, a court expert is hired by a private person (and in such case the expert’s name can be taken off the register as a consequence). Non-court experts do their expert opinions on private commission more often but its acceptance as court testimony depends on the judge’s decision. Expert opinions are produced in civil, criminal and prosecutor investigation, usually in written form. Expert also can be asked for additional written opinion when new questions occur. Oral examination of the court expert during trial happens frequently (50 – 70%).

Private expert opinion often forces the judge to hire a court expert to check whether this private opinion is unbiased.

Working conditions

Most experts work as independents although there are more and more engineers’ offices (3 – 6 persons working jointly). Expert reconstructionists often cooperate with experts in forensic medicine, if such is the decision of the organ commissioning the opinion.

A significant number of expert opinions is produced by branches of the Association of Experts in Automobile Technology and Road Traffic or the Polish Automobile Federation, operating in district cities.

The payment for an expert opinion is granted by the commissioning organ (law court, prosecutor’s office, the police) and is in the range of 7–10 euro per hour. In case of a privately hired expert the charge is settled by the parties individually.

The costs of an expert opinion are in the range of 150–400 euro. The prosecutor or the judge can assess the expert’s input and value of his/her work and reduce the final bill. So the bill does not always reflect the work input, but yields to the market: “how much can the given expert opinion be sold for?” At present in criminal proceedings agreement proceedings are possible, without a trial, when the defendant submits voluntarily to the penalty which is then less severe than it might be otherwise. In civil cases agreement proceedings are possible between the litigants, which reduces the need for expert’s opinions. The high costs of computer software, literature and other expenses do not make expert’s job highly profitable, which unfavourably affects the cadre selection.

Working areas

A court expert produces his/her reports in the field he/she is certified in, but in practice there are specialist groups: general automobile technology (vehicle failure, repair efficiency and correctness), road accident reconstruction (accident analysis, identification of driver’s person, insurance fraud), vehicle post-accident examination, calculation of repair costs. The president of a district law court can be applied to appoint an expert in any field, although the certification distinguishes three areas: automobile technology in general (1), accident reconstruction (2) and repair cost calculation (3). Certification can be granted in following combined areas: (1), (1+2), (1+3) or (1+2+3).
Associations, institutions, activities

Apart from the role of the Institute of Forensic Research mentioned earlier, an important task is performed by the Association of Experts in Automobile Technology and Road Traffic, and the Polish Automobile Federation. A minor role is played by the Association of Transportation Engineers and Technicians.

Court experts in road accidents do not have a separate professional organization. Setting up a national EUV group is being planned, after membership principles have been established (e.g. certified experts and those who passed competence tests).

Experts can upgrade their qualifications at year long postgraduate courses, run successfully by the Cracow University of Technology together with the Institute for Forensic Research, and the Association of Experts together with the Warsaw University of Technology and the Military Academy of Technology.

Experts are provided with materials by the Institute for Forensic Research such as books, computer programs, “Paragraph na Drodze” (Paragraph on the Road), a monthly journal for experts and the Association of Experts Biuletyn monthly (a Bulletin), price-lists and other materials prepared by group “Infoexpert”. (The somewhat quaint name “Paragraph on the Road” stems from a time when the readers were mostly lawyers, but the reader profile has changed in the meantime.) The international conferences on “Road Accident Reconstruction Problems”, held every two years, organized by the Institute of Forensic Research, with the participation of about 300 experts, are a good opportunity to further one’s education. The role of insurance institutions which have begun to employ their own experts and fund experts’ offices, has been on the increase lately.

Portugal

Rui António Lauer de Mesquita (GEP)
rui.mesquita@gepsa.pt

Introduction

It is since the beginning of the 1990’s that the theme and concept of accident reconstruction is being introduced in Portugal, mainly due to the need of insurance companies to define responsibilities, followed by court and lawyers interest. The Spanish insurance company “MAFRE” was the first to offer a computer based program (Rescontrutor 98), that allowed specialists to improve their manual calculation methods. In short, we can say that “Accident Reconstruction” starts to be known on the market, while at the same time offer and demand is growing.

Qualification

There is no university degree or other formal training to qualify reconstructionists engineers.

On the relatively few cases that an approach to accident reconstruction was identified, we noticed a mixed situation of professionals involved, ranging from very experienced hands-on professionals to qualified engineers. The number of potential cases for accident reconstruction handling seems to be still on the level approach of accident inquiries / investigation. In situations where road conditions are the key factor, we notice that the specialists tend to be engineers with a high level of professional experience on their particular field, such as highway construction, tyres, etc.

The market as well as the courts still define qualification very much based on professional “hands-on” experience, although we see an increasing appreciation from the courts to the presence of more qualified people such as engineers. We think that was due to the fact that the people involved weren’t aware of this type of activity and its potential. GEP (Gestão e Peritagens Automóveis) is one of the main local companies, and has reconstructionist engineers certified by European institutions.

No formal experience or academic degree is required to work in the field of accident reconstruction.

Certification

There is no official certification for an accident reconstructionist.

Position in Court

Each litigant party chooses its own expert (generally, accident investigators from insurance companies, and in less numbers, some small private companies of accident studies) when considered relevant.

Written inquirers’ reports mainly consist of contact analysis and contradictory evidence of the accident. When added to the judicial process, the report is considered rather as a piece of information to support the litigant parties, than as a technical means of proof.

Oral testimony is normally considered the key factor for decision in court, even in cases when a reconstruction report was presented by a qualified engineer and his expert opinion was taken.
Working conditions
Practicalities not settled on the market.

Working Fields
Practicalities not settled on the market.

The main trend still focuses on technical proof of insurance fraud and technical examination of vehicles after accidents for repair cost purposes.

We notice that a demand for accident reconstruction studies is developing on the market. At the moment, GEP is developing a step by step approach exploring accident reconstruction potential and concerned services, the results of which will be published on the internet.

Associations, Institutions, Activities
A non marketed software has been developed (prior to 1998) by a professor from the Lisbon engineering university “Instituto Superior Técnico”.

Several associations and institutions act on field of traffic safety, but none specialized on vehicular accident investigation.

Slovakia
Tibor Kubjatko, tibor.kubjatko@usi.sk

Qualifications
In order to get certified as a reconstructionist in Slovakia, one has to fulfil the following prerequisites: 

• university degree in traffic or vehicle technology
• 7 years of practice in the field
• a course in legal issues of practising before the court (30 hours minimum)
• post-graduate studies in accident reconstruction (minimum 300 hours with exam)
• a proof that one has the equipment needed to perform this job, like the software or technical equipment.

Certification
In the Republic of Slovakia, expert opinion is regulated by the Ministry of Justice.

If he fulfils the requirements, the expert is automatically registered to the bulletin-board of experts. This list is governed by the Ministry of Justice and the demands on the registered expert are rather strong. In case of delayed work he may be fined or even removed from the list. (A renewed registration is only possible after three years latency.)

The registration to the bulletin-board is temporally unlimited, but usually checked every five years. There are three forms in which experts may practice:

Experts – private persons
Prerequisite for the certification is expertise, practical experience and technical equipment

Expert organisations
Expert organisations are mostly interested in big assignments, 90% of them being rating and consulting of enterprises. But meanwhile the first pioneers arrive in the reconstruction sector.

Expert institutes
According to Slovakian law, experts institutes have a special relevance: They have to guarantee a high scientific and professional standard and they are obliged to organise special training for technical experts. They also function as centres in close cooperation with the Ministry of Justice.

Experts not registered on the bulletin-board are not affected by this regulations. They are then restricted to offer their work to private firms, organisations and insurance companies. In general, they do not reach the skill level of certified experts.

Position in court
The assignments to the expert stem half by half from governmental institutions (especially courts and the police) on one hands side and private institutions or persons on the other. Formally, one has to distinguish whether the expert was assigned by the police or the court or by one of the litigant parties. In the latter case, the report counts as a so-called literal proof. In practice however, both reports are weighted equally as free forms of proof by the judge.
Recently, insurance companies play a dominant role, who deny to adjust fraudulent claims founding on expert testimony. Typically, the role of the expert is not limited to written testimony: He is also frequently asked for an expert comment. This functions as a short answer to a short and simple question and particularly assists the police in prosecution.

**Expert opinion or comment does not necessarily have to be in written form. Law allows them to be dictated in the court or in the police room. In practice, this option is rarely made use of.**

**Working conditions**
At the moment, 90% of the experts work as private persons. A minor part is working for organisations, much of these also working on private account. Expert organisation are especially active in the field of enterprise rating. Experts are often employed by such an organisation and consider accident reconstruction as a private sideline.

The remuneration of the Slovakian expert lies far below the European average. For governmental organs, law settles a fix tax of 400 SKK (about 10 €) per every started hour. This tax includes all kinds of costs like further education, insurance and use of technical equipment. Typing costs and costs arising from special investigations, like metallographics are refunded. In an extremely urgent or difficult case, the remuneration may be raised by 50% to the maximum.

In case of private assessments, the remuneration is not settled, but reaches, according to difficulty, 700 SKK (about 17,50 €) to the maximum.

**Working fields**
Usually, automobile experts are certified to be active in 3 realms:

- accident reconstruction
- technical condition of vehicles
- estimation of vehicle damage.

The combination proved to reach to the organisational optimum and reduces costs: The expert investigating the accident at spot may just as well perform the calculation of damage costs!

Experts are frequently called to traffic accidents and assist the police in saving traces. Furthermore they may make suggestions in which direction questions to the witnesses should aim.

**Associations, Institutions, Activities**
In Slovakia there are two organisations for Experts in traffic. The EVU Slovakia was founded in 1995 and has been a small group of active experts. Later, the Slovakian Association of Experts in Traffic took up the appendix “EVU Slovakia”. This organisation unites about 120 experts, according to about a third of all experts working in Slovakia.

It is important to mention that besides information on accident reconstruction, these are also very keen on themes regarding technical condition and estimation of vehicle damage.

Beside these organisations, the Institute of forensic engineering (www.usi.sk), founded 1985 at the University of Zilina, plays a decisive role. This organises meetings, further education and contacts abroad. The institute also edits a journal in which contributions from abroad are welcome.

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**Slovenia**

*Ivan Prebil*
*ivan.prebil@fs.uni-lj.si*

**Education required**
Candidates for court experts need to have a university degree in a technical discipline (mechanical engineering, physics, construction, etc.). The study takes 5 years. A candidate is required to have six years of work experience from the field in which he/she wishes to act as a court-certified expert and must have the professional knowledge and competences required for that field of activity. Road accident experts are required to hold a driving licence for all classes of vehicles, but that is not always the case in practice.

**Appointment of Court Experts**
In cooperation with the Association for Accident Research and Analysis, information and preparatory seminars have been organised for candidates in order to help them prepare for the examination. Preparatory seminars are general and specific. General seminars include fundamental knowledge on the organisation and administration of the judiciary and legal systems, main judicial proceedings, rules of evidence and legal provisions on the rights and duties of court experts. Specific seminars provide court experts with special knowledge in their area of expertise. The examination, which consists of a written and oral part, takes place before an Expert Commission of the Ministry of Justice which establishes the candidate's expertise in the narrow and wide scope of the relevant scientific discipline and the specific field of activity for which the candidate wishes to obtain accreditation.

After having passed the examination, the candidate is appointed “court expert” by the Minister of Justice on the day he/she is sworn in and receives the Decision of Appointment stating his/her particular area of expertise.

Minister of Justice shall withdraw the appointment of a court expert if the expert has asked for withdrawal, if the expert no longer meets the requirements laid down in the Law on Courts and if the expert fails to perform his/her duties in a regular and conscientious manner.

**Provision of Expert Opinion**
Court experts provide expert opinions mainly at the request of a Court and an examining judge and only seldom for private parties such as insurance companies, police, solicitors and natural persons. Private expert opinions are mainly used in the preparation of civil procedures and are, as a rule, not admitted by the Court as evidence material. In any case, the Court appoints a court expert of its choice.

**Working conditions**
Court experts provide expert opinions in addition to their regular jobs. Existing legislation does not provide for the formation of specialised agencies which could provide full-time employment to court experts specialising in accident research and analysis. The fee for the preparation of an expert opinion is defined in the fee schedule approved by the Ministry of Justice and covers a review of the court record, collection and analysis of data, accident site inspection and preparation of the opinion report. The fee schedule states three difficulty levels which are linked to different point
values. Point values are harmonised with the attorney's price list. Currently, the fee for providing an expert opinion for a civil or criminal procedure is between EUR 400.0 and 800.0.

Working fields

Road accident analysis is a specialised area which falls under the area “transport”. Court experts analyse the course of a road accident in all its phases and determine biomechanical load on the passengers at the time of the impact.

Associations, institutions and activities

Court experts for road accident analysis are organised under the Association of Court Experts for Accident Research and Analysis of the Republic of Slovenia, which is a member of EVU (European Association for Accident Research and Analysis). Court experts attend regular seminars organised by the Association and the Ministry of Justice of the Republic of Slovenia. Whenever possible, they also attend annual EVU congresses and Global Safety conferences. Information on the development of the area of expertise can be obtained from the relevant scientific and professional magazines and from research projects as well as graduate theses and doctoral dissertations prepared through the University of Ljubljana and Road Safety Institutes.

Spain

Juan Luis de Miguel
jl.demiguel@centro-zaragoza.com

Qualification

Currently, despite some efforts made in recent years, there is no official certification for accident reconstruction in Spain. Thus we can find a very heterogeneous group of professionals acting as expert witnesses in traffic accident matters. They stem from fields like engineering, automobile expertise, police, or even criminology.

The real thing is that, in fact, most of the accident reconstruction experts have a university degree in mechanical engineering, but there is no prerequisite at all for this specific job. Therefore it’s just the customer who decides which reconstructionist to hire, and finally it is the judge, who appraise the expert reports and their depositions on the trial, the one that decides the value of a certain expert testimony.

Legal references about experts’ qualification can be found in the Criminal and Civil procedure laws, as well as in the Law for managing and superintending the private insurances. All of them set similar requirements: “experts must have a degree in the subject they are reporting about, if there are official degrees that regulate those professional careers,…..”

To my opinion, here lies the main obstacle for an effective professional regulation of the accident reconstruction matter: there is no official degree in accident reconstruction at Spanish universities. Of course, there are hundreds of “diplomas” from private institutions and universities, which differ strongly in the prerequisites for their pupils to be accepted, and also in the extension of the courses: from 18 to 300 hours. But an official degree, like lawyer, physician, engineer, doesn’t exist for accident reconstructionists.

Certification

In order to assure the appropriate level of qualification that law still has not settled clearly for most of the expertness specialities, like the accident reconstructionist, representative organizations from the insurance sector and the professional association of insurance experts tried to take the necessary actions. With this aim they collectively established the basic requirements for training programmes and ways and means to put them in practice.

While writing this presentation, the Insurance General Directorate is on the way for approving the basic requirements for training courses, developed by the association of experts, acting in the fields of automobiles and homes. But still is not decided for accident reconstructionists, although the programme was concluded some years ago. The proposal required to be previously certified as an automobile expert, plus a university degree in engineering, to be accepted in the training courses. It takes about 6 years to get a university degree in "superior" engineering and about 3 years to get a degree in "technical" engineering. Both are accepted.

Position in court

In the overwhelming majority of cases, the reconstructionist is hired by one of the litigant parties, not by the court. Therefore is very often to find two or more experts in the trial.
Like a normal witness, the expert is asked to swear or promise to tell the truth and to act faithfully, according to his/her knowledge.

Usually the experts agree on the accident’s evolution (what happened?), not so often they agree about details like speeds, time, distances, etc. (how did it happen?), and more infrequent is that they agree about the accident causes (why did it happen?). The judge could enjoind a confrontation (face to face) between experts, but this occurs very rarely. Usually he/she uses to appraise the expert opinions by his/her personal impressions after the trial. Thereby he/she will always pay special attention to the traffic police report, that is in fact considered as the official expert’s report, even in those aspects regarding physical calculations or technical opinions.

In the past (before year 2000) civil litigation expert testimony was given exclusively in a written report. Additional questions by the litigant parties were posed in written form and also answered that way, which allowed to analyse expert reports from different parties with time enough. In order to speed up the justice administration, and also stating a more fresh and direct contrast of experts and witnesses by the judge, the new Civil Proceedings Law has changed that aspect and civil litigation, as well as criminal, are now based on an oral trial. The only difference is that, in criminal proceeding, the expert reports can be kept secret until the beginning of the trial, whilst in civil litigation the report has to be presented at the court together with the sue, which it means to be sent to the court some months before the trial, and it opens the possibility of a new expert report, from the opposite party, when appealing.

The court could hire, if necessary, a third expert, but in fact this only occurs when the judge considers that he needs a third testimony in order to understand the origin of the contradictions between the two experts, or to clarify some aspect, which in fact occurs very rarely.

**Working conditions**

Most reconstructionists work as independents in small offices, usually consisting only of the expert himself and (possibly) a secretary. There are also research institutes, like Centro Zaragoza, employing 6 full-time reconstructionists, and some other institutes or university departments, which recently have started the activity of private reconstructionist.

The payment of reconstructionists is not settled by law and so there is a wide range of rates in the market. Practically speaking, lawyers and insurance companies, who are the main customers, prefer a fixed price per report to an hourly charge. This fixed charge normally lies in the range of 1000 – 3000 €. If the normal time dedication to an accident is about 20 – 40 hours (the lower the price the shorter the time), it’s easy to see that finally the hourly rate lies in the range of 50 – 75 €.

Regarding the evolution of the demand, it was noticeable that about fifteen to ten years ago the number of accidents to be reconstructed, and in the same proportion the number of accident reconstructionists, started to increase. At that time many automobile experts considered this to be a new possible activity for their running business, and thus many new experts arose. Finally just the most qualified and the ones that have reached an acceptable level of prestige persisted.

**Working fields**

Within the field of vehicular accident reconstruction there are also some special areas, that require further specialisation, like technical examination of vehicles after accidents (checking possible fails or malfunctions), determination of the origin and causes of automobile fires, technical proof of insurance fraud, biomechanical loading during impact (usually regarding to whiplash injuries), insecure loads on lorries, or tyre failures. Any of this working fields requires very specific knowledge and practice, so there are very few technicians with expertise enough, and often they don’t want to pay for such expert testimony in a trial, because they are not used to deal with the legal system or because their main customers are manufacturers with potential involvement.

**Associations, institutions, activities**

The recently created National Observatory of Accidentology meets the higher level specialists from different institutes and universities, with the aim of suggesting guidelines for traffic safety research through accident investigation. Some of the members are accident reconstructionists, which realise the societal value of their work, but the purpose of the observatory is far beyond the reconstruction of accidents.

The largest experts’ association is APCAS, whose members are mostly experts in damage calculation (repair cost estimation), but also hosts some reconstructionists and physicians (corporal damage calculation). For those just interested in accident reconstruction there is no organization in our country, so we have to look towards foreign countries, which in practice means to look towards the United Kingdom, USA, or EVU Germany, of course, but so far, the language barrier is a big obstruction.

Maybe the most popular yearly meeting abroad is the PC-Crash seminar, that is held every Easter in Graz (Austria), as this software is used by a large number of Spanish reconstructionists which receive information from DSD. Introductory seminars, explaining the basics of accident reconstruction to novices, and also advanced training courses do exist, some of them with a high level of quality. These are held in research institutes and universities like Zaragoza, Madrid, Barcelona and Oviedo, the latter being more focused on biomechanics. Regarding scientific research, there are some interesting projects about traffic safety that use accident investigation as a data source, although they are not pure research for accident reconstruction methodology but for safety improvements.

As there are no Spanish journals, the Accident Reconstruction Journal, from the USA, or IMPACT, from the UK, are good information sources, although the number of Spanish subscribers is marginal.
Spain 2

Juan Carlos Iribarren Vera
Cesvimap@cesvimap.com

Qualifications

Currently no specific or minimum qualification is required in order to practise as an accident reconstruction claims adjuster. We can find people doing this job without any university qualifications, who base their judgement on their professional experience, as in the case of retired sheet metal workers or civil guards, etc.

We may also find adjusters who, although without a university degree (engineering, physics etc), have studied branches of automation or claims adjustment at polytechnic level, and who, having done specific “Accident Reconstruction” courses, now issue Technical Reconstruction reports.

More common still are Technical Engineers, Aeronautical Engineers, Public Works Engineers and etc who, either self-taught in this area, or after having done a specific “Accident Reconstruction” course, issue and ratify reports in the law courts.

In none of these cases is minimum experience demanded in order to carry out this claims evaluation, although when the report is being ratified in the law court, stress will be laid on the qualifications and on the professional experience of the adjuster.

Certification

Reconstruction adjusters working on Road Traffic Accident Reconstruction are not regulated by any certificate-issuing official body, nor do they have to take any examination which would lead to official certification.

The closest we get to this is to find people who, having taken a specific Accident Reconstruction course (although not an official course), and received accreditation in the form of a diploma for the course, workshop or congress, will include this diploma with their technical reports in order to back up their knowledge.

Position in the law courts

When deciding on a reconstruction adjuster, each side will look for an expert in this matter to issue their technical report.

On the day of the case, it may be that only one report will be presented, but on the other hand each side may bring a report which in the majority of cases will all be contradictory. In this case, the skill of each adjuster will be of importance in order to be able to present their theory to the judge convincingly. Although it can happen, it is unusual for adjusters to see each other face to face in the courts, unless the judge decides that this type of declaration is called for.

On other occasions when the judge finds two contradictory reports, a third claims adjuster may be offered for approval by all parties; this adjuster would normally be called from the College of Engineers to issue a third claims adjustment report.

The reconstruction adjuster may be called to give evidence either as an expert witness or simply as a witness, and, both in criminal courts and in magistrates’ courts, the ratification of the report is made on the spot during the hearing: the adjuster is cross-examined orally by both sides, having taken the oath during the same hearing.

Working conditions

The majority of accident reconstruction adjusters are independent and work alone or in claims adjustment bureaux alongside two or three more people who also work in the field of claims adjustment for automobile accidents.

On other occasions we may find “University Engineering Schools” or Research Centres like CESVIMAP (MAPFRE Centre for Research and Road Traffic Safety), amongst whose numerous activities is research into road traffic accidents, and who have highly qualified technicians ready to carry out these claims adjustments in Road Traffic Accident Reconstruction.

These reports are requested both by individuals and by insurance companies.

The price of a report varies according to its complexity and to whether an inspection of the place of the accident or the vehicles involved needs to be carried out.

Prices for reports can range between 1,000 and 3,000 Euros, not including travelling expenses for the adjuster to ratify the report in the law court: those expenses will vary according to the distance involved and to whether the adjuster has to stay overnight previous to the hearing.

On some occasions when an accident analysis is going to be carried out, preparatory reports are prepared to look at the viability of the reconstruction and at which points should be pursued in the case of it being advisable to carry out the report. These preparatory reports tend to cost between 300 and 500 Euros; this amount can then be knocked off the final price if the full report is then prepared.

Fields of work

In the absence of accident reconstruction claims adjusters with official certification, these adjusters are not obliged to accept whatever matter they are presented with.

Most claims adjusters of this kind carry out reconstruction reports related to the calculation of speeds, of the mechanics of the accidents and of the way in which the crash occurred.

There are further topics which are becoming increasingly important in this area, such as vehicles catching fire and possible mechanical failures (airbags, traction controls, breakage of parts); technicians preparing reports on these types of subjects are normally more highly qualified and will belong to research centres like CESVIMAP or specific University Departments.

Associations, institutions and activities

It is normal for there to be annual conferences organized by Local Police forces, the National Traffic Directorate (DGP), or the IPA (International Police Association) where experiences and working practices are exchanged.

There is no official organism which gives training or qualifications; there are only centres like CESVIMAP or certain university engineering departments where training courses in Road Traffic Accident research are given, but these courses do not have official recognition.

These courses or seminars will give diplomas demonstrating attendance, but there are no final assessment tests for those who have done the courses.
Sweden

Anders Flogård
Anders.Flogard@me.chalmers.se

Qualification
There are no certified reconstructionists in Sweden.

Position in Court
In most cases, the court uses the testimony given by the police. The data at the accident scene is collected by the police at hand. He/she normally doesn’t have much experience in accident reconstruction. The accident scene sketch is rough with just a few measurements, no camera is used.

In more severe cases a police technician gives a written testimonial about the case. In a few cases he is also participating in court. He gives his opinion about technical problems such as the damage to the vehicles involved and an estimation of what happened.

An accused may directly hire an expert to protect his own interests but faces higher court costs. A normal figure is that the law insurance covers up to 11,000 – 22,000 Euros and the excess is 20%; hence, experts are not often used.

Another problem that has evolved recently is that the insurance companies do not always follow the opinion given by the police. The insurance companies interpret the evidence differently to their favour. The person involved in the accident in question sometimes has to sue the insurance company to prove what happened. This has made people lose confidence in the work done by the police.

Working conditions
The police technician normally doesn’t have a university degree but has taken courses in vehicle inspection. These courses are given by Bilprovningen, a company that periodically inspects the Swedish registered motor vehicles and trailers.

The Swedish National Road Administration (Vägverket) reconstructs all fatal accidents with their own staff. The reconstructionist has normally had his working career within the Road Administration and has no former experience or education in crash reconstruction. They focus mainly on pointing out problems in the road environment. The reconstruction data is used for statistics.

Some universities and institutes have their own reconstruction teams. Volvo Car Corporation, SAAB Automobile and Volvo Trucks have their own reconstruction teams for research and development. Furthermore, some insurance companies involved in traffic safety research employ their own reconstruction teams. These reconstructionists are often highly qualified with an engineering approach and in some cases complemented with specialists in medicine and behavioural science. These reconstructionists normally do not work for courts.

Switzerland

Alain Florin,
a.florin@agu.ch

Qualification
In Switzerland, there are no legal prerequisites for reconstructionists, even if a degree of a university of applied sciences (Fachhochschule) usually is regarded essential for general acceptance. The ordering party, however, is free to mandate the expert of its choice.

All companies employing reconstructionists require a degree of a university of applied sciences (Fachhochschule, with special focus on automotive construction, taking about three years) or a university degree plus evidence of further studies in automotive construction.

Certification
There is only one authority that certifies reconstructionists (SAS – the Swiss Accreditation Body).

The Swiss chamber of technical and scientific court experts has recently started certifying experts. This certificate is accepted by SAS; it is, however, very expensive. As it is not yet clear whether this kind of certification will produce new employers, most reconstructionists refrain from this type of certification, i.e. none of the reconstructionists has done so up to now.

There is no official certification as such for an expert to work in the field of accident reconstruction in Switzerland.

Working Conditions
Today, there are about 15 reconstructionists in Switzerland, six of which are employed by the big insurance companies (Winterthur und Zurich). Three experts are employed by federal authorities (Kantone), the rest is working in independent consultancies or as independents.

The majority of reconstructionists is employed by companies, while there is only one self-employed expert who works exclusively in the field of accident reconstruction.

Depending on the ordering party, the reconstructionist usually works for courts, insurance companies, or lawyers. Rarely, written testimonies are also done for single persons.

In most cases, an expert is chosen as a result of personal contacts, long business connections, or due to a recommendation.

Position in Court
Reconstructionists working for insurance companies usually work on cases of their employer or write reports by order of the company. Depending on the ordering party, the expert testimonies may be used outside the trail, in a civil or in a criminal case.

The order usually is delivered in written form with the possibility to turn it down; however, this is the exception.

The testimony is to be handed in in written form – apart from few exceptions: for example, in case of internal reports for insurance companies, or if (the report being done for a lawyer) it turns out that the testimony will be to the disadvantage of the client respectively there can be no meaningful deductions from the report.

In sum, there are more reports carried out for a litigant party than for the Courts. As a consequence, there might be more than
one expert opinion in a trial. If the experts of the parties do not agree on a common solution, the Court often calls for an overall testimony to be carried out.

If there are further questions by the parties, they are submitted and answered in written form. An oral examination of the expert in front of the Court is an exception.

If a party hires an expert to give his opinion, there is no obligation to reveal the results to the opponent.

Private expert opinion is most often consulted during the preparation of a possible trial or appeal, in order to gather ammunition or to calculate the process risk more accurately.

If the testimony is done for the Court, the expert is informed at the beginning about the consequences of a faulty report (prison or administrative fine).

**Working Conditions**

The majority of reconstructionists has a fixed salary. The price of a written report does not depend on the size of a claim; the hourly charge differs between 150-200 SFR/h (about 95-126 €/h). There is no official form for a written testimony. It is up the client whether he wishes a refund of expenses (Kostengutsprache) or not. If a cap was agreed upon and the expert realizes he will exceed this limit, he has to decide either not to charge his overwork or to ask his client for a higher payment. Under extreme conditions, he might return the order without finishing it.

In Switzerland, it is comparatively easy to initiate a lawsuit; there are no restrictions on the minimum account to claim nor is there an arbitration to pass in advance. Fault is in many cases devided by the insurance clerks, usually based on the decision of the judge (but this is not obligatory). If there is no agreement, one of the parties can take civil action.

The rising number of legal protection insurances leads to an increasing number of lawsuits. In addition, the usefulness of accident reconstruction gains wider acceptance. Consequently, reconstructionists need not be afraid to run out of work.

As the choice of an expert is free, it is difficult for newcomers to get appropriate orders. Especially courts rely on companies with connections to official authorities (e.g. Zurich university or engineering college Biel). This might be the reason why there is only a small number of self-employed reconstructionists in Switzerland.

**Working Fields**

The working field of the accident reconstructionist is not self-contained. Many experts do other jobs on the side, e.g. vehicle analyses, evaluating parking damages as well as technical defects of cars, etc.

Calculation of repair costs is a separate field, which is offered by two reconstructionists only.

In the past, accident reconstructionists also carried out biomechanical analyses. However, this has changed recently as it was accepted that this type of work exceeds the knowledge of a technically educated professional. Today, biomechanical analyses are carried out exclusively by specialists for legal medicine.

Usually, reconstructionists are not consulted immediately at the accident scene.

**Associations, Institutions, Activities**

Most members of EVU Switzerland are accident reconstructionists, while specialists for legal medicine, accident researchers and members of the police can become members as well. They are represented by the country group EVU Switzerland.

Apart from EVU, there is the Swiss chamber of technical and scientific court experts, which accepts independent experts only; most of its members are architects. There are a few other institutions, e.g. the Swiss Automotive Engineering Society (SATG). Yet experts interested mainly in accident reconstruction will only find contacts to the Swiss chamber of technical and scientific court experts useful.

EVU Switzerland organises two conferences per year, taking place in spring and autumn, respectively. These are attended by the majority of the members, who often make contributions to the programme as well. Further, there is an annual crashtest workshop in Wildhaus, organised by Winterthur/Dekra. Due to the small number of members, there is a fruitful exchange of views between the members throughout the year.

Members of EVU Switzerland do rarely attend the annual European conference of EVU and the crashtest workshop of the Arec-Group due to budget restrictions.

Apart from these events, there are view occasions for further education in the German speaking area. Seminars introducing beginners into accident reconstruction are not offered. Beginners are introduced into the working field almost exclusively by experienced reconstructionists.

The monthly journal Verkehrsunfall und Fahrzeugtechnik (Vehicular Accident and Vehicle Technology) is the main platform for knowledge exchange. Many members also make use of the German email forum. There is a lot of German literature on accident reconstruction and on its different sub-fields.
3.2 Statistics – Detailed Results of the Questionnaire

3.2.1 INTRODUCTION

Of the countries participating in the QUERY project, 23 responded to the questionnaire. These were Austria, Belgium, Cyprus, the Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden, Switzerland and Norway. From Estonia, Lithuania, Malta and Ireland, no response was received. The full text of the questionnaire can be found in appendix VIII. Please note that the numbers given to the diagrams in this document are the numbers of the respective questions in the original questionnaire.

A large amount of detailed information has been established by means of this questionnaire, and has been quantified where possible and applicable. The respondents made a great effort not only in answering the questions directly relating to the reconstructionist’s profession, but also in gathering information on many other issues. While not every single detail could be provided by every country, a low number of responses received to a question is often explained by the fact that the particular question was applicable only to a certain number of respondents. At times, however, difficulties in gaining access to the information required were responsible for a lower number of responses.

Seeing as not all questions apply to all respondents, please note that the percentages given throughout this document always relate to the number of respondents to a particular question only. To give a simple example, if a certification system is available in 50% of the participant countries, no more than half of all respondents can reply to the question ‘For certification, does the applicant have to pass an exam?’.

In this presentation of the statistics, the corresponding two-letter country codes are frequently used to refer to the participant countries. These are listed in appendix III of this report. Responses to questions which required a free text answer are, for the purpose of readability, only summarised here. All responses made are listed in full in the ‘endnotes’ to the statistics. (see 3.2.9)

3.2.2 THE PROFESSIONAL PROFILE OF ACCIDENT ANALYSTS

3.2.2.1 General Information on the Status Quo

In 75% of the countries which participated in the questionnaire, at least some accident reconstruction (AR) is carried out by persons who do not possess an academic qualification.

Exceptions are Slovenia, Slovakia, Latvia and Denmark, where this is not permitted by law. Luxembourg, among the 75%, seems to be in somewhat of a grey area, as the law does not actually provide for persons without an academic degree to carry out AR.

When not carried out by an academically qualified reconstructionist, AR is most frequently performed by damage assessors working the field of insurance (in 76% of all respondent countries). Also independent claims adjustors, usually trained as mechanics (in 53% of the respondent countries) and former police officers with traffic accident experience (in 41% of the countries) carry out AR. In 65% of the countries, there are also other professional groups who perform accident reconstruction.

The chart below shows how much of all reconstruction work is carried out by each of these groups.

6a) other groups carrying out reconstruction, per country:
A) AT; GR; IT: graduates of technical colleges
B) BE: graduates of postgraduate degrees without AR specialisation
C) GB; NL: serving police officers in specialist departments
D) ES; PT: serving police officers
E) Fi: traffic or highway engineers
F) FR: mechanics, military personnel; court: ‘experts judiciaires’ appointed by a judge
G) LU: ‘expert en automobile’ (official title of specially trained mechanic)
H) PL: ‘transport economist’
While in some countries, more than 90% of reconstruction work is carried out by academically qualified reconstructionists (the Eastern European countries, Germany, Switzerland), in Southern Europe only about half of all such work is performed by such reconstructionists (Italy, Spain, Greece, Cyprus). In the UK, in Finland and Belgium, this applies to only a quarter or less of all such work. In France, AR is not carried out by reconstructionists as such. There, the title ‘expert judiciaire’ is given to an expert appointed by a judge.

For the purpose of this analysis, the term reconstructionist will be used to refer to the academically qualified reconstruction expert.

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<th>Country</th>
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<th>Claims Adjustors</th>
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In the Eastern European countries (CZ, LV, PL, SI and SK), certification is only available to academically qualified reconstructionists, while in Austria, Greece, Luxembourg and the Netherlands, other groups may also obtain certification. In half of the participating countries, no system of certification is in existence.
13) Can any of the above mentioned groups, other than the academically qualified one, obtain certification as a reconstructionist?

A: Yes, some or all of these groups
B: No, none of these groups
C: Don’t know who can obtain certification
D: Certification is not available in my country

In Austria, both damage assessors and claims adjustors may obtain certification – the system allows anyone who can provide proof of their expertise to become certified. While a reconstructionist must have five years of working experience, this increases to 10 years for persons without academic qualification.

In the Netherlands, where the police carry out AR, certification is available to both active and former police officers. In Greece, former police officers, damage assessors as well as traffic engineers with a certificate from the State Technical College may obtain certification.

In Luxembourg, the profession of accident analyst or reconstructionist is not specifically defined – only the general ‘expert en automobile’ is known (see figure 6a), and can be certified. When it comes to hiring an expert, preference is usually given to those with academic degrees in engineering or physics. However, the courts frequently hire experts from abroad, e.g. from Belgium, who then possess a different (if any) certification. Police officers cannot obtain certification in Luxembourg.

While in Austria 95% of certified experts are academically qualified reconstructionists, in Greece only 40% are. There is no figure available for Luxembourg or the Netherlands.

In roughly a third of the countries, court work is carried out to at least 90% by reconstructionists. These are Austria, Germany, Switzerland, Norway, Poland, Hungary and the Czech Republic. In the other countries, court work is more often carried out by other groups – in some countries, less than 20% of all court work is carried out by academically qualified reconstructionists.

### 3.2.2.2 Opinions on the Professional Profile of Reconstructionists

Participants were asked whether they agreed to a clear distinction to be made between the profile of the academically qualified reconstructionist and those of other professions with similar working fields. A clear majority of 86% responded with yes.
26) In principle, would you agree to a clear distinction to be set down between the academically qualified reconstructionist with further specialist training, and other professions working in the field of accident reconstruction?

Further, we wanted to know whether or not participants regarded a suitable academic qualification as essential to the carrying out of the reconstructionist’s profession. 85% of respondents agreed strongly to the following statement:

27) How strongly do you agree with the following statement?
‘Accident reconstructionists must have a suitable academic qualification’

83% of respondents agreed strongly to the idea of reserving the terms ‘accident analyst’ and ‘reconstructionist’ for suitably academically qualified persons.

28) How strongly do you agree with this statement? ‘The terms ‘accident analyst’ and ‘reconstructionist’ (and their equivalents in other languages) should be reserved to describe the professional profile of persons with a suitable academic qualification.’

Comments on the opinions given were made in question 29 (see endnotes). These can be summarised as follows:

• The quality of a reconstructionist’s work is dependent on his/her academic qualification. Only with such qualification can it be ensured that the title ‘reconstructionist’ describes a suitably qualified expert.
• Sufficient knowledge in mathematics and physics is essential. In its absence, wrong conclusions can easily be drawn, which is a risk that – especially in penal cases – cannot be taken.
• A theoretical academic degree alone is not sufficient – suitable working experience is essential, as is knowledge in vehicle technology, damage calculation and similar.
• A qualification from a University of Applied Science (Fachhochschule in German) must be considered as on a par with an academic degree (the terms used for different third level institutions vary throughout Europe, as do the qualifications awarded).
• As long as working experience, sufficient in quantity and quality, is required for qualification, there may be excellent experts who do not possess a qualification at degree level. These should not be classed as second-rate.

While there was strong agreement that a distinguishable professional profile for academically qualified reconstructionists is necessary, there were concerns about the terms reconstructionist, investigator or analyst, as lay people cannot easily differentiate between them. This is not only visible in the comments made (see endnotes, question 31), but also in the much more varied opinions on the following statement:
Suggestions made for other terms in the English language were the add-on ‘scientist’ or ‘engineer’, giving an academically qualified reconstructionist the title of, for example, accident reconstruction scientist.

Also mentioned was the fact that the term ‘Accident Investigation’ is a broader one, which may include the higher qualified ‘accident reconstruction scientist’.

It was also mentioned that one single protected title, only awarded to academically qualified and specially trained reconstructionists, may be sufficient to distinguish this group from others without a protected title.

3.2.3 QUALIFICATION OF RECONSTRUCTIONISTS

The most frequently held academic qualification of reconstructionists is a degree in mechanical engineering. Other types of engineering degrees are also common in some of the countries. In many countries, there is also a small number (about 5%) of physics graduates working in reconstruction.

The length of study to obtain such a degree varies from three years (PL, PT, FI) to seven years (SK, AT), with the most common length of such degree programme being five years.
36) How many years does university education leading to such a suitable degree typically take?

- AT
- BE
- CH
- CZ
- DE
- ES
- FI
- FR
- GB
- GR
- HU
- IT
- LU
- LV
- NO
- PL
- PT
- SK

In all countries, a class B driver’s licence is a prerequisite to working in reconstruction. A class A motorcycle licence is also required in roughly a third of the countries. In some, a class C licence or higher is a prerequisite also.

37) Which driving licenses must a reconstructionist possess? (multiple answers possible)

- A: class A (motorbikes)
- B: class B (standard driver’s licence - cars)
- C: class C (trucks)
- D: class CE (heavy trucks/articulated lorries)
- E: class D (passenger transport)

In practice, however, these requirements are often not strictly adhered to. This is the case in over 85% of the countries. (It goes without saying this concerns classes other than B).

38) In practice, is this requirement very strictly adhered to? I.e., does a reconstructionist usually have all the driver’s licenses which are officially required?

We therefore tried to find out whether participants did actually consider driving licences in classes other than B essential, and if so, why.

A reason given for the necessity of a class A motorcycle licence in addition to class B was the fact that the vehicle dynamics of these two differ greatly. It was, however, also commented that the licence itself, without driving experience, was of little value. The possibility of experts specialising in commercial vehicles, who would have the necessary driving practice, was also mentioned (see endnotes, responses to question 40). All in all, however, roughly two thirds considered class B as sufficient.

39) How strongly do you agree with the following statement? ‘ Obtaining licenses in classes other than class B is expensive and time-consuming, while holding few benefits, due to the lack of driving experience with those larger vehicles. The class B license should therefore be considered sufficient.’

41) Which system is used for the certification of reconstructionists? That is, who certifies the reconstructionist? (multiple answers possible)

In some of the countries in which no certification is available, reconstructionists frequently use their membership of professional organisations to document their expertise.

We asked ‘If no certification as such exists in your country, are there other ways in which a reconstructionist can “certify” his expertise, e.g. through membership of a professional organisation or similar?’ From some of the responses, the importance of being able to prove one’s professional qualification in such way can be gleaned (for the full list of responses received, please see question 42 in the endnotes):

GB ‘There is no official certification of court experts in the UK, but the Council for the Registration of Forensic Practitioners is beginning to fulfil a similar role, and they have a division in which police officers may register. Otherwise an expert will offer membership of professional bodies to support his claimed status: Institute of Traffic Accident Investigators (standard: City & Guilds certificate and good experience); Institution of Mechanical Engineers, Institution of Civil Engineers, Institute of Physics (degree level and probably Eur. Ing.); and some other lesser engineering institutes.’

FI ‘If he or she is employed by a well-known institution and has a suitable profession, his or her statement is more likely to be taken into account.’

CY ‘It is very important to be a member of Traffic Accident related Institutions. Engineering Bodies have a good record in court and CPD record. Recently the Engineering Chamber of Cyprus published a list of Expert Witnesses and Arbitrators. All these persons hold a 5 year Engineering Degree, and Accident Reconstruction is among the subjects of expertise.’

In roughly half of the countries in which professional associations exist, membership is only open to those who provide proof of their expertise. Another way of ensuring a professional standard is membership by appointment.
43) If you mentioned professional organisations in your answer to the previous question, is membership with these automatic, or does the reconstructionist have to submit details to prove his expertise?

A: anyone can become a member
B: when applying for membership, the person's expertise has to be proven
C: other *

* CH: members vote on new admissions; DK: member must be appointed; no details given by other respondents

3.2.4.2 Certification Procedure

Apart from Luxembourg, an exam always has to be passed as part of the certification procedure. Greece also responded that no exam was necessary, but there, reconstructionists register with individual courts. Such registration procedure does not require an exam in any country.

44) In order to obtain certification, does the reconstructionist have to pass an exam?

The exam contents were listed as follows:
DE Vehicle technology, law, accident reconstruction (not standardised throughout DE)
LV Three expert report and annual attendance at a seminar for insurance damage assessors
AT Written part: Reconstructing an accident from actual court case: Which factors have to be determined, which questions are to be expected from the court and the lawyers
Oral part: general questions on the specialist knowledge of a reconstructionist
For simulation also: preparation of three simulations
Duration: written part: 1 hour; oral part: chairperson 15mins, each examiner 30mins
Subjects: specialist knowledge (physics, vehicle technology, vehicle dynamics, gathering and interpretation of evidence, photogrammetry, injury patterns, time-distance analysis,...), examination on legal questions relating to court experts, e.g. court procedures, the organisation of expert lists, liability of an expert

CZ
1. Practical part: 3 expert evidences, 2. Written part: test (60 questions), 3. Oral part
SI Kinetics, biomechanics, vehicle technology, road surfaces, expert and legal systems,...
NL In civil law, a certification and registration system for this group of experts is being developed at present (details not known yet)
SK Law, vehicle technology, theory of accident reconstruction, technical examination of vehicles
HU Postgraduate education at technical university
DK Control of all types of vehicles, driving licence examination (all classes), accident reconstruction

The examining committees are made up of between one and five persons, averaging on three. The examining committee consists, in most cases, of at least one person with specialist technical expertise, and one with expert knowledge of the judicial system.

46) How many people is the examining committee made up of?

The qualifications of the members of the examining committee were named as:
DE Accident analyst, legal expert, engineer
LV None, they are well-known people
PL Some are professors of mechanical engineering, some experienced experts
AT Chairperson: judge; Specialist Examiners: provided by the Federation of Experts, with the relevant specialisation, usually experienced experts
CZ TU Professors, certified experts
SI Vehicle mechanics, biomechanics, law
SK All (members) must possess a university degree and have to be accredited experts
HU Doctoral degree / Professorship
DK Appointed by the Ministry of Justice, usually with a degree in engineering
In order to obtain certification, an expert must at least possess several years of working experience. As additional expertise or special training required for certification were listed:

- **DE** Working experience
- **LV** Specialisation – e.g. for expert reports on biomechanical issues, the expert needs to possess specialist training in biomechanics (occupant movement during impact)
- **PL** 2 years of experience and many expert reports (ca. 50-100) done as assistant of expert
- **AT** With relevant degree: 5 yrs working experience. Without: 10 yrs working experience. Additionally, knowledge of human factors (perceptive faculties)
- **CZ** Special training for accident experts (approximately 240 hrs) at the Institute of Forensic Engineering of Brno University of Technology
- **SI** 5 yrs working experience, suitable qualification, further training with contents proposed by the EVU
- **NL** A solid qualification, which can be a suitable academic one, or a comparable one on a comparable level
- **SK** Specialist postgraduate degree, 7 yrs working experience

In all countries with an actual certifying system, certification requires an oath. In several cases, this oath upon certification replaces the necessity of an oath when giving evidence in Court. (While Latvia and Denmark answered that no oath is required, theirs is a different system of registration).

The respondents were asked how satisfied they were with the assessment of moral integrity in their country, and whether moral integrity should be monitored more closely (i.e. after certification has been granted). The issue of such a continuous assessment is taken up by more than half of the respondents, who would like to see it introduced. However, there seems to be some uncertainty as to a suitable method for carrying out such assessment. For the full responses to question 52, please see endnotes.

The length of working experience required for certification varies from two to seven years, averaging on 4.2 years for an academically qualified reconstructionist. In Austria, where the length of working experience required is five years, this increases to 10 years for candidates with a lesser qualification than the academic one.
53) How many years’ work experience must a reconstructionist have to become certified?

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* AT: 10 years required for applicants without an academic degree

54) Does the certification remain valid for the expert’s working life, or must it be renewed after a number of years?

- Lifelong validity
- Limited to a certain number of years

In Poland, certification remains valid for three years. In France, an ‘expert judiciaire’ must renew his accreditation with the judge every two years in order to remain on the expert list. In all other countries with certification systems, the length of validity is five years. In Austria, however, this is the case only for first-time applicants. There, a renewal of the certification remains valid for a period of ten years.

55) If the certification must be renewed after a certain number of years, please enter the number of years it remains valid:

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* while the first certification in Austria is valid for 5 years, any renewals remain valid for a whole 10 years

Generally, certification is only granted for a certain period of time, after which it must be renewed. Only in Luxembourg and Denmark does the certification remain valid lifelong. In all other countries (85%) it has to be renewed after a certain period of time.

In only 58% of the countries with certification, a stamp or seal is issued to a successful candidate to document his status on official expert reports. These are Germany, Austria, Latvia, Poland, Slovakia, Hungary and Denmark. It is used on written expert reports, and usually contains the expert’s name, his or her title and the certifying institution. In some cases, the expert’s specialisation is also listed. For a detailed description of the seals and their function, please see endnotes, responses to question 57.
56) Does the certified reconstructionist receive a stamp, seal or similar to document his certified status on official expert reports?

[Chart showing the distribution of responses to the question]

3.2.4.3 Satisfaction with Certifying System

In a small number of countries, satisfactory certifying systems are in place. Respondents from many countries, however, were of the opinion that their certifying system, if existent at all, could be greatly improved.

58) How satisfied are you with the certification system in your country?

[Chart showing the distribution of satisfaction levels among respondents]

While a large number of respondents rated their satisfaction with their country's certifying system as 'very dissatisfied' or 'dissatisfied', these include those which do not possess an official certifying system. Dissatisfaction in those cases refers to the absence of such a system.

The respondents from the Czech Republic, Austria, Germany and Slovenia were either satisfied or very satisfied with their systems. Those from Switzerland, Denmark and Slovakia were neither satisfied nor dissatisfied.

Respondents from nine countries (CY, FI, FR, GR, HU, LT, LU, PL, SE) were either dissatisfied or very dissatisfied with the respective certifying systems available to them.

The individual reasons given for the satisfaction ratings are listed in the endnotes, responses to question 59.

Of those countries with a certification system in place, only Germany, Austria, the Czech Republic and the Netherlands would like to see their respective system remain in place. Like the Netherlands, the UK – while not having a certifying system as such – mainly uses police officers for the reconstruction of accidents, and also preferred to keep the system as is.

60) Would you prefer a change to a different system?

[Chart showing the distribution of responses to the question]

The preferred certification system very clearly is one carried out by a national institution. Of the respondents to this question, 10% each opted for ISO certification and for certification through a private institution respectively, while 65% opted for certification through either a national or a European institution (see also endnotes, question 61).

61) If 'yes', which system would you prefer?

[Chart showing the distribution of preferred certification systems among respondents]

3.2.4.4 Effect of Certification on an Expert's Working Life

Respondents were asked what effect certification had on the work a reconstructionist receives a) from private clients and b) from the courts.

In 60% of the countries that responded to this question, certification was seen as having a positive effect on work from private clients, in 75% as having a positive effect on court work. Only Poland, Slovakia and Switzerland said certification did not influence the work an expert receives.
Respondents were also asked if certification did affect the reconstructionist’s status at court, a) when he appears there as an independent / joint expert, and b) when he appears there as a private expert hired by one of the litigant parties.

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<th>b) certification – effect on status of private expert</th>
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</table>
| **DE** | 1. positive
   2. decisive |
| **PL** | without influence
   without influence |
| **FR** | Mandated ‘expert judiciaire’ is the only work valid.
   No effect. |
| **AT** | Strengthens the expert’s position.
   Strengthens the expert’s position. |
| **CZ** | [see previous chart]
  [see previous chart] |
| **NL** | Certification is not required, he has to possess expert knowledge |
| **CH** | see question 64
   [i.e. see column a] |
| **CY** | It is a demonstration of the standard, training, qualifications etc. of the reconstructionist which the courts must take into consideration. |

3.2.4.5 ISO accreditation

Generally, ISO accreditation seems to have no relevance to accident reconstructionists. Where no certification is available, ISO would seem better than none. Where certification is available, it is the only relevant standard, ISO accreditation being of no relevance. The respondents from those countries who have both options available felt that ISO was not a suitable method of quality assurance for the field of accident reconstruction.

In Poland, where ISO was introduced 4 years ago, about 20% of reconstructionists obtain ISO accreditation in addition to certification. In the Czech Republic it has been available for 5 years, but apart from Poland, in none of the countries in which ISO accreditation is available is it made use of.
66) If an ISO 9000 compatible standard (international standard for quality management) exists separately to public certification, approximately how many reconstructionists obtain ISO accreditation in addition to their 'traditional' certification?

- AT: 0%
- CZ: 0%
- DK: 0%
- HU: not ISO but IQ cert
- LV: 0%
- PL: 0%
- SK: 0%

We asked if the ISO standard and its accreditation were monitored, for example by an independent authority. Only Poland and Switzerland responded that there was some form of monitoring of this accreditation in place.

67) Is the ISO standard and its accreditation monitored (for example, by an independent authority)?

- NO
- YES

The figure given by Poland and the Czech Republic for the cost involved in obtaining ISO accreditation was €400. While the other countries gave no response, ISO accreditation is a lot more costly in the Western European countries. The ‘IQ-cert’, an accreditation taken up by many Hungarian reconstructionists (through a German-based private institution) involves costs of about €1200.

For comments made on ISO, please see endnotes, responses to question 71.

3.2.5 REMUNERATION OF ACCIDENT RECONSTRUCTIONISTS

3.2.5.1 Remuneration of Self-Employed Reconstructionists

In 60% of the countries, when an expert is hired by the court, the remuneration received is fixed by law; in the remaining 40% it is not. Those 40% are Latvia, Spain, France, the UK, Portugal, Belgium, Denmark, Switzerland and Cyprus.

The remuneration received for a completed report, when hired by the court, is only fixed by law in very few of the countries, namely Poland, Slovenia, Belgium and Austria.

72) When hired by the court, is the remuneration an expert receives fixed by law?

- NO
- YES

While in Poland, the Czech Republic, Slovenia, the Netherlands and Finland, the rate of remuneration for a court hired expert is set down by law, the respondents from these countries did not enter a figure.

From Spain, France, the UK and Switzerland we received a going hourly rate, but this rate is not officially fixed by law.

Considering that apart from these four, all other respondents have rates set down by law, it is very surprising to find Italy at the very low end of the scale, along with the Eastern European countries.

All in all, the hourly rates of remuneration for reconstruction experts vary greatly across the EU.

The countries who gave a figure for an hourly rate received from the courts appear on the same places of the scale showing the hourly rates for privately hired experts.

In some countries, they charge ever so slightly more when hired privately, in some they charge the same amount as the court rate. In no countries do they charge less.
However, the set fee for a report completed for the court does show some great variations on the scale. While in Italy this, in contrast to the hourly rate, reflects a more realistic amount, it is at the low end of the scale in Austria.

And here, often the amount received from court and the one received from a private client differ greatly. France, for example, has the highest rate when court-hired, but ranges towards the lower ones for reports completed for private clients.

In the UK, a larger amount than elsewhere is charged to private clients for a completed report.
We compared these figures to the hourly rates of medical doctors and lawyers respectively, as the academic qualification and expertise of these professions would be somewhat comparable to that of an accident reconstructionist. In many countries, this is indeed reflected in a similar rate of pay. However, where remuneration is particularly low, e.g. under €10 an hour, it falls way behind the hourly rate of a lawyer, which would be around €40 or 50.

Comparison: The hourly rate of pay a court-hired reconstructionist receives versus the hourly rate of pay of a medical doctor (question 84) and of a lawyer (question 85):

- Hourly rate of pay, reconstructionist
- Hourly rate of pay, medical doctor
- Hourly rate of pay, lawyer

3.2.5.2 Reconstructionists in Salaried Employment

While the very largest percentage of reconstructionists is self-employed, not all of them are. In Switzerland and the UK, this percentage is very low; in Latvia and Finland, virtually none are self-employed.

The remuneration for reconstructionists in salaried employment also differs greatly across the various countries, partly in a similar way as hourly remuneration differs.

In Italy, Belgium, Luxembourg, Cyprus, Greece and Slovenia, no reconstructionists are found in salaried employment.

In Latvia, 99% of reconstructionists are in public employment, i.e. employed by the State. In the UK and in Finland, at least 50% are in public employment.

In Spain, Portugal, Poland, Hungary, Denmark, Austria, Switzerland and the Netherlands, a small number of publicly employed reconstructionists is found.

78) Are there any reconstructionists employed by the state or any public institutions?

79) What is the approximate annual salary of a reconstructionist employed by the state?

* No figures available from the other 5 countries with state employment.
In the same countries as above, as well as the UK, some reconstructionists are also employed by private reconstruction firms. Except for Denmark, these countries also have accident reconstructionists in employment with insurance companies. This is also the case in Germany, France, Slovakia, Latvia, Finland, Switzerland and the Netherlands.

These are generally very few, except for Finland and Switzerland, where 50% of reconstructionists are in employment with insurance companies.

80) Are there any reconstructionists employed by private companies or institutions who specialise in reconstruction work?

81) What is the approximate annual salary of a reconstructionist employed by a private company or institution that specialises in reconstruction work?

82) Are there any reconstructionists employed by insurance companies?

83) What is the approximate annual salary of a reconstructionist employed by an insurance company?
The following diagram gives an overview of the various forms of employment in which reconstructionists are found across Europe. Sweden gave no response to this question, however, it is important to mention that there are no fulltime working reconstructionists in Sweden at present. This is going to change in the coming years, with the profession currently in the process of establishing itself there.

86-89) We would like to know approximately what percentage of reconstructionists work in these various forms of employment above. Please give an approximate percentage.

- self-employed reconstructionists
- reconstructionists employed by the state
- employed in reconstruction firms
- employed in other related industries, e.g. insurance companies

3.2.6 THE RECONSTRUCTIONIST WITHIN THE LEGAL SYSTEM

3.2.6.1 Requirement of Expert Attending the Accident Scene

Generally, a reconstructionist can be called to the scene of an accident if and when required. In Latvia and the Netherlands, however, an accident reconstructionist cannot be called to the accident scene. In all other countries, that possibility is there.

90) Can a reconstructionist be called to the scene of an accident?

Most commonly, it is the prosecutor who calls the reconstructionist to the scene. Only slightly less frequently is the reconstructionist called to the scene by the police.

In Germany, Norway, Poland, Czech Rep, Hungary and Greece, the reconstructionist can be called to the scene by either the prosecutor or the police.

In Italy, France, Portugal, Cyprus, Slovenia, Luxembourg, Belgium, Austria and Switzerland, he or she has to be called to the scene by the prosecutor. However, in Switzerland, this virtually never happens.

In Cyprus, also lawyers or insurance companies have the possibility of asking the reconstructionist to attend the scene.

In the UK, in Finland, Denmark and Slovakia, he or she has to be called to the scene by the police.

In Spain and Sweden, neither the prosecutor nor the police call the reconstructionist to the scene; instead, this is the responsibility of the road traffic administration.

91) If so, by whom is the expert called to the accident scene?

(multiple answers possible)

A: the prosecutor
B: the police
C: other *

*other: ES, SE: road traffic administration; CY: insurance co’s, lawyers; CH: except for very few exceptions, expert never called to scene
When asked how frequently a reconstructionist is called to a police-attended accident, the UK gave a figure of 90%. However, academically qualified reconstructionists are called to the scene much less frequently.

As the system in the UK is very different from the systems elsewhere, and reconstruction is usually carried out by specially trained police, this would explain the high percentage given for the UK. The response from the Netherlands was that a reconstructionist cannot be called to the accident scene. However, as this is the only country with a system similar to the UK’s, it may very well be that specially trained police experts attend the scene. With the systems in these two countries differing greatly from those of the other participating countries, the answers here are somewhat misleading. In both the Netherlands and the UK, specially trained police attend road traffic accidents, which is seen there as replacing the need for an actual reconstructionist.

In Finland, Slovakia, Hungary, Greece and Belgium, this would occur in between 20 and 40% of police-attended accidents, in the other countries much less frequently.

In the event of a severe accident (one that may cause death or serious injury), however, a reconstructionist is much more frequently called to attend the scene.

In Sweden, Greece, Slovakia, Finland and the UK, this is the case in 90 to 100% of all severe accidents.

In Belgium, Hungary and Norway, reconstructionists are called to the scene of 50 to 75% of all severe accidents.

For Germany, Poland, the Czech Republic, however, this figure drops to around 30%.

And in Spain, France, Denmark, Switzerland and Austria, a reconstructionist is yet much more rarely, if ever, called to the scene of a severe accident.

The participants were asked in which of four occurrences a reconstructionist would regularly be called to the scene.

In 68% of the countries, a reconstructionist is regularly called to the scene in the event of death or serious injury.

Only in 27% of the countries, he or she would regularly be called when fault cannot be determined.

In 36% of the countries, an alleged technical fault would regularly result in a reconstructionist being called.

And in only 14% of the countries would a reconstructionist be asked to attend the scene when it needs to be determined which of several occupants had been driving the vehicle.
94) In which cases would an expert be regularly called to the scene? (multiple answers possible)

A: in the event of death or serious injury
B: when fault cannot be determined, i.e. when it is unclear how the accident occurred
C: in case of alleged technical fault of a vehicle involved in the accident
D: to determine which of several occupants had been driving the vehicle
E: other

Only one other occasion in which the expert would be asked to attend the scene was listed, namely by Poland, who made mention of the fact that a reconstructionist would be called to the scene if a VIP was involved in the accident, regardless of the accident’s severity.

Further responses in the category ‘other’ were made by Italy, France and Spain, where an expert is virtually never called to an accident scene. While in France an expert would be called in the event of an extremely severe accident, in Spain no experts ever attend an accident scene unless they are doing so for research purposes.

3.2.6.2 Penal case: Joint or Private Expert

We wanted to know if the legal system of the respective countries used one joint expert, or private experts instead.

In just under a third of the countries that gave a response, the legal system allows only for a court-hired joint expert (AT, DE, LU, LV, PL, SK) in the event of a penal case. In France, it is the judge directly who hires this expert, while in the Czech Republic it is the police.

The legal systems of Hungary and Denmark also use a joint expert, but he or she is hired by the two litigant parties in mutual agreement.

In Greece, both of the above ways of hiring a joint expert are possible.

In another third of the countries (CH, ES, PT, IT, NO, SI), the legal system allows for more than one option. Norway, Italy and Slovakia either use a court-hired joint expert or two experts privately hired by each of the litigant parties.

In addition to these two options, the legal systems in Spain, Portugal and Switzerland also allow for one mutually agreed upon joint expert to be hired by the litigant parties.

In the legal systems of the UK, Cyprus and Finland, the expert never functions as a joint expert but is always hired by one of the litigant parties as a private expert witness.

95) In penal, or criminal, cases, who is the expert hired by?

A: by the court as joint expert
B: by the two litigant parties as a (mutually agreed upon) joint expert
C: by one of the litigant parties (prosecutor/defendant) as one of two expert witnesses
D: more than one of the options are possible

We asked those countries whose legal systems allow for more than one option to indicate how frequently the expert would be hired to function as a joint expert in a penal case. We then compared this to the use of a joint expert in a civil case.

From Portugal and Switzerland, no response was received. (We also received other answers from countries which do not have the option of either joint or private expert available, therefore they do not appear in the diagram.)

In Slovakia, the option of hiring a private expert is hardly ever taken up by a litigant party, neither in penal nor in civil cases. In Spain, on the contrary, a private expert is hired in virtually all cases.

96) If more than one possibility exists, how frequently is the expert hired to function as a joint expert in a) penal/criminal cases and in b) civil cases?

We compared the use of a joint expert in penal/criminal cases to the use of a joint expert in civil cases.
3.2.6.3 Confidentiality of Private Expert’s Report

In most of the countries, a private expert’s report can either not be kept confidential at all, or only in the event that no part of it is disclosed at all (that is, if disclosed, it must be disclosed in full).

In one half of these countries (FR, CZ, SI, SK, HU, DK, AT), such a report can never be kept confidential, while in the other half (DE, LV, ES, GB, FI, CY, GR, SE) it can be kept confidential provided that no part of it is disclosed.

Exceptions are Italy, where things unfavourable to that party can remain undisclosed, and Portugal, where the expert’s report may remain confidential during a police investigation. In Switzerland, no report is given to the court, instead the expert must answer the questions put to him.

In civil cases, the requirement of experts to always appear in court only exists in Spain, Hungary, Greece and Cyprus.

In the majority of countries the expert must not necessarily appear in court, but may be asked to do so to answer questions. In Portugal, a written support is sufficient.

98) In case of a privately hired expert, can any findings in his report be kept confidential?

YES, in other situations

YES, but only if no part of the report is disclosed

NO

[18]

99) In a penal/criminal case, does the reconstructionist have to appear in court as an expert witness?

A: Yes, he must always appear in court to present his findings

B: No, a written report is sufficient

C: Generally not, but he may be asked to orally answer questions on his written report

D: Yes, the expert must always appear in court to present his results

In 80% of the countries, an expert always appears under oath in a penal case. In a third of these (PL, FR, SI, SK, AT), the expert does not have to take an oath when at court, but can refer back to the one he took upon certification. In Switzerland, no oath is necessary, as a false report can be punished with either a fine or up to five years imprisonment.

In Italy, only the court expert has to take an oath.

In Germany, Latvia and Greece, an expert is generally not under oath when appearing in court in a penal case. Either of the litigant parties may however request that he take an oath. In Hungary, no oath is required.

100) In a civil case, does the expert have to appear before the court?

A: No, report is issued in written form only

B: Yes, report is first issued in written form, expert must appear before the court later

C: Report issued first in written form, but expert may be requested to appear in court later

D: Yes, the expert must always appear in court to present his results

101) In a penal/criminal case, does the expert have to be under oath?

A: Yes

B: Yes, but as he already took an oath upon certification, he may refer back to this oath

C: Generally not, unless requested by one of the litigant parties

D: No

E: other *

* other: IT: only the court expert is required to be under oath; CH: no oath - a false report can be punished by a fine or by imprisonment
In civil cases, neither Hungary nor Switzerland or Luxembourg requires an oath.

In the other countries, the same rules as for penal cases apply.

102) In a civil case, does the expert have to be under oath?

- **A:** Yes
- **B:** Yes, but as he already took an oath upon certification, he may refer back to this oath
- **C:** Generally not, unless requested by one of the litigant parties
- **D:** No
- **E:** other *

Experts are most frequently hired when the judge in a case considers an expert’s opinion necessary, and nearly as frequently when one of the litigant parties requests an opinion. In a quarter of the countries (DE, IT, ES, SI, SK, NL, LU, BE), a third expert is sometimes hired when the opinions of two private experts diverge.

In Portugal, Switzerland and Sweden, generally no experts are consulted. The UK, Cyprus and Finland do not actually have a system that uses court-hired experts.

103) In which situations are experts hired by the court? (multiple answers possible)

- **A:** generally, no experts are consulted
- **B:** if the judge considers an expert’s opinion necessary
- **C:** if one of the two litigant parties requests an expert’s opinion
- **D:** if a third expert is required in the case of diverging opinions of two private experts
- **E:** other *

104) Is the opinion of a joint expert valued higher than that of a private one? Please indicate how frequently or strongly this is the case.

We asked respondents which options available to a judge they preferred, in the event that joint and private experts’ opinions diverge.

Approximately half the respondents would prefer the judge to hire a third expert in such circumstances. France and Belgium preferred to take the joint expert’s opinion, and disregard the private one. And about 20% of respondents would favour the private expert’s opinion if his arguments are obviously the stronger ones.

It was also suggested that the judge should evaluate the evidence and come up with his or her own opinion. Another suggestion was consulting with more experts, and possibly testing the crash scenario. It was commented that the third expert should be one with a higher qualification. In Britain, there is never both a joint, court-hired expert and a private, independently hired one in the same case.

105) In your opinion, how is the judge meant to act when private and joint (= independent) experts’ opinions diverge?

A joint expert’s opinion is very frequently valued higher than that of a private one. 65% of respondents said that in their country a joint expert’s opinion is either mostly or always valued higher than that of a private expert. 20% of respondents said that the joint expert’s opinion is rarely or never valued higher than a private one’s.
In close to half of the countries, a reconstructionist is hired to function as a joint expert in a court case, in an equal number of countries, there is the option of either hiring a joint court expert, or an independent private one. Only in Cyprus and Finland, the reconstructionist is never hired to function as a joint court expert.

106) In the legal system in your country, is a reconstructionist hired to function as a joint expert, or as one of two expert witnesses?

A: hired to function as a joint expert in a court case
B: hired as one of two expert witnesses
C: both options are possible

We wanted to know who makes the choice of hiring a particular expert when the legal system uses joint court experts.

107) If the legal system uses a joint expert, is it a) the litigant parties who agree on an expert to be chosen, or b) does the judge have the sole decision on who to hire as an expert?

A: litigant parties agree on an expert to be chosen
B: judge has the sole decision on expert choice

Seeing as in nearly three quarters of the countries it is the judge, not the litigant parties, who chooses a joint expert, we asked how – if at all – the judge’s choice could be vetoed.

108) If it is the judge who chooses the expert, how can a party veto the judge’s choice?

A: the party does not have to give any reasons for the veto
B: the party does not have to give any reasons, provided the opposing party also vetoes the judge’s choice
C: the party has to prove the expert to be unsuitable for the case in question
D: the party cannot veto the judge’s choice unless the opposing party also vetoes it
E: none of the above - the judge’s choice cannot be vetoed
F: other

In the Eastern European countries, in Greece and the Netherlands, a party can generally only veto the judge’s choice by proving that he is unsuitable for the case in question. In Austria, the party does not have to give any reason for the veto.

3.2.6.5 Pros and Cons of the two Legal Systems - Opinions

We asked which of the two legal systems was considered more just - the system using a joint expert, or the system using two private experts, one for each party.

Roughly half of the respondents preferred the option of using one joint expert, while nearly another half were of the opinion that both options should be available in a legal system. The UK and Cyprus, who both have ‘adversarial’ legal systems with two private experts in place, preferred these.

Generally, approximately 50% of respondents preferred the system already in place in their country.

109) Which of these two legal systems do you consider more just / better?

A: one joint expert
B: two independent experts, one for each party
C: both options should be available in a legal system

85% of those who preferred the joint expert system agreed that it was more just because the joint expert is impartial / unbiased.
That there was less cost involved for the litigant parties was not seen as important by many. Rather, most respondent felt that it was more just because the joint expert system ensured that judgment is based on fact, and not on how convincing one of the experts appears in court.

A quarter of all respondents stated that they preferred the system that uses two separate experts competing against each other.

Half of these agreed that this system was more just because of the lack of ‘quality control’ if one singular expert is used – possible errors could remain undetected. The other half said that it was more just because each party’s own position was properly backed up with his or her own expert’s scientific findings.

The countries which preferred the availability of both systems named the freedom of choice for the litigant as an important reason. Ensuring a competent, unbiased opinion, especially in complicated cases, was given as an equally important reason for the availability of both systems. The joint expert is seen as sufficient in many cases, but not in all. For the full responses received, please see endnotes, question 112.

3.2.6.6 Litigation in the various Legal Systems

We wanted to find out how easily or how difficult initiating a lawsuit was in the various countries, and to find out the reasons why.

Only in France, Latvia and Slovenia is it very difficult to initiate a lawsuit. In a quarter of the countries, it is neither particularly easy nor difficult to initiate a lawsuit, while in over 60% of the countries it is either easy or very easy to do so.

The percentage of all road accidents resulting in civil litigation varies greatly between the countries. In Italy and Greece, where initiating a lawsuit is very easy, 50 to 60% of all accidents result in civil litigation.

In Latvia, where initiating a lawsuit is very difficult, as well as in Poland, Slovakia, Austria, Switzerland, the UK, Finland and Cyprus, between 10 and 20% of all road traffic accidents result in civil litigation.

In France, Norway, Spain, the Czech Republic and the Netherlands, no more than 5% of accidents result in civil litigation. Of those, only in France is initiating a lawsuit very difficult.

The countries which preferred the availability of both systems named the freedom of choice for the litigant as an important reason. Ensuring a competent, unbiased opinion, especially in complicated cases, was given as an equally important reason for the availability of both systems. The joint expert is seen as sufficient in many cases, but not in all. For the full responses received, please see endnotes, question 112.
114) Approximately what percentage of all road traffic accidents result in civil litigation?

- AT
- CH
- CY
- CZ
- ES
- FI
- FR
- GB
- GR
- HU
- IT
- LV
- NL
- NO
- PL
- SK

0% 25% 50% 75% 100%

In 87% of the countries, insurance to cover the cost of litigation is available. Only in Latvia, Slovenia and Cyprus is this not the case.

115) Is there insurance available which covers the cost of litigation?

- NO
- YES

N [23]

In Norway, Sweden and Spain, virtually the whole population is covered for litigation.

In Germany, Switzerland, Austria and the Netherlands, between 50 and 70% of the population have such insurance, in Finland about 40%.

In Greece, Denmark and Hungary only between 15 and 25%, and in Italy, Slovakia and the UK as low as 10% of the population have cover for litigation.

116) Approximately how many percent of the population are covered by insurance which covers the cost of litigation?

- AT
- CH
- DE
- DK
- ES
- FI
- GB
- GR
- HU
- IT
- NL
- NO
- SE
- SK

0% 25% 50% 75% 100%

Of those, Hungary, Greece, the UK, Latvia (where no insurance is available) and Spain all have some solicitors working on a 'No Win No Fee' basis.
In Hungary solicitors apparently work on a ‘No Win No Fee’ basis in up to 60% of cases, in the UK in about 20%. In Latvia and Spain, the figure is under 5%.

The availability of insurance or of a ‘no win no fee’ solicitor does not seem to influence the number of accidents resulting in civil litigation. Neither does the ability to easily initiate a lawsuit seem to play a role in most countries. However, where initiating a lawsuit is difficult, civil litigation is rare.

The insurance industry in 60% of the countries requires the injured party to deal directly with the opposing party’s insurance company.

In Spain, Luxembourg, the Netherlands, Slovenia, Denmark and Sweden, however, the injured party must go through his own insurance company for a damages claim from a third party’s insurance.

The following general comments were made regarding the different legal systems:

FR  CGI RSA and Badinter law  
[in France, the insurance companies have formed a kind of association and have created a fund from which damages are paid. This way they avoid going to court over minor cases, and will often not go to court over larger sums either. The ‘Badinter Law’ makes it very difficult for any driver to win a road traffic accident case, as the driver is basically considered always at least partly at fault].

GB  “No win, no fee”: although some lawyers operate this system, if you lose you will have to pay the other side’s fees! To avoid this, you can take out insurance, which will be arranged by your lawyer - so you still have to pay something!

NL  [In the Netherlands] penal and civil law are very different from one another.

CH  The status of ‘expert’ is not a protected one. Damage regulation can be arranged privately, through insurance companies or through the courts. In most cases, damages are regulated via the insurance companies, who come to an arrangement with each other.

GR  In civil cases, the damages for traffic accident victims are considerably higher [in Greece] than in the rest of the European countries.
3.2.7 RECONSTRUCTIONISTS’ WORKING FIELDS

Determining causes of vehicular accidents, calculating a vehicle’s speed at the time of an accident and carrying out technical checks on vehicles involved in accidents (to determine possible technical faults, incl. defective tyres) are the working areas of reconstructionists in virtually all countries.

Technical checks on vehicles in general (not in relation to an accident) are also carried out by reconstructionists in more than three quarters of the countries, but are frequently also carried out by other vehicle experts.

Determining biomechanical loading during impact (in relation to whiplash injury) is a working field of reconstructionists in under half (41%) of the countries. In slightly more than half (59%) of the countries, other experts carry out this task.

Identification of the driver (i.e. determining which of several occupants had been driving the vehicle in question) is a task carried out by reconstructionists in over three quarters of the countries.

The gathering of evidence at the scene of an accident is also a working field of reconstructionists in as three quarters of the countries.

In about a third of the countries, other experts are also carrying out both of the above tasks. In very few countries (13%), gathering evidence is always carried out by experts other than reconstructionists.

Insecure loads (as causes of accidents) are a part of a reconstructionist’s work in just under three quarters of the countries, in roughly half of the countries also carried out by other experts.

Defective automatic traffic control devices (as causes of accidents) are a working field of reconstructionists in 60% of the countries. In 30% of the countries, this is also a task for other experts, while in 20% of the countries, this is always a task for experts other than reconstructionists.

Technical proof of insurance fraud is a task for reconstructionists in 64% of the countries. In 26% of the countries, other experts also carry out this task, in 13% of the countries, it is always carried out by experts other than reconstructionists.

Nullification of sale because of (alleged) technical deficiencies is an area in which reconstructionists work in 54% of the countries; in a third of the countries, other experts also work in this area.

While damage calculation / calculation of repair costs is carried out by reconstructionists in 40% of the countries, this task is carried out by other experts, such as damage assessors or claims adjusters, in 60% of the countries. In a quarter of the countries, this is never carried out by reconstructionists.

No other working fields of reconstructionists were named.

121 & 122) Which of the following fall into the working areas of a reconstructionist? Are there any professions other than that of a reconstructionist who also work in these same areas?

1) reconstructionist’s working areas

2) also the working area of other professions

- A determining causes of vehicular accidents; collision mechanisms
- B calculation of a vehicle’s speed at the time of an accident
- C technical checks on vehicles involved in accidents to determine possible technical faults, incl. defective tyres
- D technical checks on vehicles in general (not in relation to an accident)
- E biomechanical loading during impact (whiplash)
- F identification of the driver
- G gathering evidence at the scene of an accident
- H insecure loads
- I defective automatic traffic control devices
- J technical proof of insurance fraud
- K nullification of sale because of (alleged) technical deficiencies
- L damage calculation / calculation of repair costs
- M other
We inquired as to the professions who carry out tasks in the above working fields. Full details are available in the endnotes, responses to question 123. The professions which were named can be summarised as follows:

<table>
<thead>
<tr>
<th>Profession</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle technicians &amp; inspectors, private engineers, accident investigators</td>
<td>DE, ES, PT, NO, FR, GB, FI, BE, DK, SE</td>
</tr>
<tr>
<td>Police</td>
<td>ES, PT, NO, FI, CH, SK, SE, AT</td>
</tr>
<tr>
<td>Insurance assessors / Damage assessors</td>
<td>NO, FR, GB, CH, SK, SE, AT</td>
</tr>
<tr>
<td>Claims adjustors / damage calculators / Repair Cost Technicians</td>
<td>ES, PT, CZ, CH, HU, GR</td>
</tr>
<tr>
<td>Physicians (biomechanics, forensic medicine)</td>
<td>ES, PL, GB, SK, BE</td>
</tr>
<tr>
<td>Engineers from the Road Authorities / Department of Vehicle Inspection</td>
<td>CY, LV, FI, DK</td>
</tr>
<tr>
<td>Technical University staff</td>
<td>PL, GR</td>
</tr>
<tr>
<td>Fire officers</td>
<td>LV</td>
</tr>
</tbody>
</table>

### 3.2.8 RESOURCES AVAILABLE TO RECONSTRUCTIONISTS

#### 3.2.8.1 Resources used

In virtually all countries, **specialist literature** is used by reconstructionists as an important resource.

**Seminars on simulation programmes** are also visited in virtually all countries, although it is mentioned that some seminars have as much a sales character as an educational one.

**Other seminars, conferences**, including the EVU’s annual conference, and other **further training opportunities** are used as a resource in over three quarters of the countries. The crash tests annually carried out by AREC are visited by participants from just under half of the countries.

Three quarters of the countries also use **internet or email forums** as an important resource.

**Specialist journals** are being used in just over two thirds of the countries, while **academic research** is made use of in just over half of the countries.

### 3.2.8.2 Access to Resources

While all the above resources are considered very relevant to reconstructionists, various factors, including language difficulties and high costs (especially in Eastern Europe), often restrict their use.

**Conferences**

62% of respondents to this question said that the cost involved was often too high for reconstructionists from their countries to attend conferences abroad. This is the case for Latvia, the Czech Republic, Slovenia, Hungary, Finland, Italy and Belgium.

69% gave language difficulties as a reason (IT, PL, FR, GB, CZ, SI, FI, HU, BE), while the same amount said that reconstructionists in their country were not aware of international conferences as a resource available to them.

#### 125) If reconstructionists in your country do not make use of EVU/AREC/other international conferences and seminars as a resource, is this for any of the following reasons? (multiple answers possible)

- Not aware of resource (N: 13)
- Language difficulties (B)
- Resource not relevant enough (C)
- Costs involved are too high (D)
- Other reasons (E)

**Internet and email forums**

69% of the respondents named language difficulties also as a reason for the non-use of internet or email forums (NO, IT, FR, BE, CZ, SI, HU). Slovenia and Hungary also said that not having regular internet access was a reason.

In 40% of the respondent countries (NO, IT, SI, CY, LV) internet or email forums do not have enough relevance to be used by reconstructionists.

While not all countries have internet or email forums available in their local language, Poland, for example, mentioned it would be quite easy to set up such a forum.

**Specialist Journals**

Specialist journals are also not available in all local languages, and 40% (IT, FR, CZ, HU, FI) named that as a reason why reconstructionists are not using these as a resource.

23% said that specialist journals did not exist in their country (NO, FI, IT), while twice as many (NO, PT, CY, BE, SI, FI) said that reconstructionists were not aware of these as a resource.

23% (FR, FI, SI) named lack of access as a reason for not making use of specialist journals. In 30% of the respondent countries, all of them Eastern European (LV, CZ, SI, HU), the costs involved were considered too high.
**Academic Research**

46% of respondents (IT, FR, GB, FI, CZ, SI) named language difficulties as a factor why academic research was not made use of. In Norway, Finland, the Czech Republic and Cyprus, academic research does not exist or is not available.

40% (NO, IT, ES, FR, CZ) said that reconstructionists in their country were not aware of academic research being available as a resource. In these countries, academic research is either not available in the local language, or not available at all.

In Latvia, the Czech Republic, Hungary and Finland, costs are too high.

Over 45% of respondents (IT, ES, FR, SI, FI, DK, CH) said that lack of access to academic research, i.e. students' theses, was a factor why these weren't used as a resource. In some of these countries, academic theses are in existence, but it is difficult to gain access to them.

**Other Resources**

Other resources mentioned were crash tests carried out by individual reconstructionists themselves. Experience from other similar cases, including expert reports, is sometimes drawn on.

Austria mentioned EES catalogues as a resource. In Greece, experts trained through DEKRA have a lot more resources available, while other experts rely on specialist literature and the internet. The responses received can be found in the endnotes, question 130.

While in some countries little English or German is spoken, in most countries at least one of the two languages is understood. For many of the Eastern European countries, German would be the most widely spoken foreign language; for the rest of Europe, it would be English. As many resources are not available in the local language, resource availability is often dependent on the language skills of the user.

Participants were therefore asked how likely they would be to subscribe to a bilingual German / English European reconstruction journal, if such journal existed.

**3.2.8.3 Exchange of Information with Other Countries**

The exchange of information between countries is usually limited by language barriers (see above), though this may not always be the sole reason.

The Eastern European countries exchange information with Austria and Germany, and with each other. Slovenia only mentioned Austria and Germany. Latvia said that no information was being exchanged with other countries, but that it would be important to be able to receive information from Germany and Switzerland.

All other Eastern European countries mentioned Slovakia, amongst others. For the Czech Republic, the AREC Group is particularly important as a source of information. As the only Eastern European country, Poland also exchanges information with the UK and the US.

The German-speaking countries, Austria, Switzerland and Germany, mainly exchange information between each other. (No response was received from Germany).

The Scandinavian countries draw on information from either Germany or Austria. Finland also receives information from the Netherlands as well as the UK, the US and New Zealand. Norway and Denmark also exchange information between each other. No response was received from Sweden.

Italy, Spain, France and Cyprus all make use of information from the US (mainly SAE). In addition, Spain and France also look towards Austria (DSD, whose PC Crash program is widely used), while Italy exchanges information with Germany.

Information from DSD would include data developed elsewhere, such as Germany and some of the Eastern European countries.

Cyprus also receives information from Canada and Australia, as well as from Italy.
RESULTS OF THE QUESTIONNAIRE

Luxembourg draws on information from Austria and Germany. Frequently, reconstructionists from outside Luxembourg are used to draw up reports. It is the only country in which this is the case.

Belgium has little or no possibilities for an exchange of information with other countries, and relies on data from the AREC Group and the EVU.

Greece looks towards Germany for information, where some of its reconstructionists were trained, and where its vehicle inspection system was developed.

No response was received from Portugal.

The Netherlands make use of information from all German-speaking countries as well as the UK, the US and other English-speaking countries.

The UK exchange information with the US (SAE), Canada and Australia, as well as with Germany to some extent.

For the responses received on the issue of exchanging information and knowledge, please see endnotes, question 133.

3.2.8.4 Availability of Country-Specific Further Training

In Slovakia, Poland, the Czech Republic and Austria proper postgraduate or PhD studies are in existence.

Further training through private institutions or associations, seminars at universities or similar are available in Spain, France, Cyprus, the UK, Switzerland, Germany, Hungary, Latvia and Denmark. In Sweden, a course is being set up at present.

In Italy, the Netherlands and Finland, while there is also training available, this is very basic.

In Norway, Slovenia, Belgium, Luxembourg, Portugal and Greece, there is no further training available.

Again, the full set of responses to this question can be found in the endnotes, question 134.

We also wanted to know whether there were already changes being planned in the participant countries. Most countries seem to have become aware of the need for setting down quality standards and ensuring the expert is properly incorporated into the legal system.

Changes are already occurring in some countries – be it an improvement of professional standards (GB), a definition of the professional profile (IT), or the actual setting down of professional standards by law (HU, FI, PL).

Those countries with no university qualification available are keen to see an appropriate degree being set up.

The responses to the question of planned changes, as well as general comments and remarks which could be made at the end of the questionnaire, are to be found in the endnotes, questions 135 and 136 respectively.

3.2.9 ENDNOTES

Responses to question 29: Comments on the minimum qualifications for reconstructionists

DE This is the only way of ensuring that the title accident reconstructionist always describes a qualified expert (minimum standard).

ES Since accident reconstruction requires the application of many techniques and knowledge that is being taught at our technical universities, why don't the courts use persons trained there? Another good reason would be that no person without a suitable academic degree can prove that he/she has enough knowledge (for example in physics) to develop calculations without misconceptions.

FR “Experts Automobiles” (assessors for Insurance Companies) have a title given by the Government and are registered on an official list (ca 3000 persons). “Experts Judiciaires” are empowered by judges and are part of 2 official lists (Regional and National). Those 2 titles are protected by law, but do not mention any academic degree.

GB I have answered +2 [= agree strongly] in questions 27 & 28 because the only academic qualifications available in the UK are the “City & Guilds of London” Certificate for Police Officers and a certificate at a similar level granted by De Montfort University. The academic standards of these are not high.

AT Prerequisites are aptitude, expertise, appearance, and an interest in the causal relationships. In the absence of these prerequisites, problems will occur in the certification process. Academic education alone does not enable someone to fully comprehend the causal relationships at play. Therefore, 5 years of working experience are required, and are increased to 10 years for persons without an academic degree. A differentiation usually results from [an expert’s] specialisation and his profile. A differentiation would create a classification which would not necessarily reflect reality, and which would consider as ‘second class’ those experts without academic qualification.

CZ In the Czech Republic there is another scheme of expert activity. According to the law, expert activity could be provided by persons who have passed special training for expert activity. This training (approximatelly 240 hours) has been provided by the Institute of Forensic Engineering of Brno University of Technology since 1967.

NL The professional training for accident reconstruction requires a solid education. This can be a specialised academic qualification, or a comparable qualification with a similar way of thinking and the same standard of work.

FI I would say that further education, training and passing an exam is enough to qualify a non-academic but motivated person as a reconstructionist. These persons shouldn’t be excluded. Distinction between academic and non-academic may be needed at some level, for example if academic background has more relevance to understanding the theory behind reconstruction methods.

CH I would consider a degree from a university of applied science (e.g. vehicle construction) as more suitable than an less relevant academic degree from another university.

CY The level and background of reconstruction work depends on the academic qualifications the analyst possesses.
LU I would consider as important an extensive and in-depth education in mathematics and physics, seeing as one frequently has to think laterally in order to interpret different pieces of evidence. Without an in-depth education, one can easily draw wrong conclusion without realising it. Especially in criminal law, any resulting misjudgment can morally not be justified.

SK A reconstructionist also has to know vehicle technology very well. Here, the actual market demands in society, as well as the actual practical experience of experts has to be considered as well. Thus a reconstructionist has to be trained in damage assessment and damage calculation as well.

GR A degree from a university of applied science (‘Fachhochschule’) has to be equated to that from a standard university.

SE Hardly any accident reconstruction is carried out in Sweden, and to get acceptance in the field of work a professional profile with an academic degree and a certification are welcome.

Responses to question 31: Suggestions regarding possible terms for the distinction of professional profiles

DE "Unfallberater" (German) – without adequate qualification, this professional group would have to restrict themselves to consultation in the private sector. For the lay person, the difference between ‘Analytiker’ and ‘Gutachter’, ‘analyst’ and ‘expert’, is certainly not clearly visible.

ES I agree with the distinction, and it’s quite clear for me that different tasks that are expected from each group, but I’m not sure if the general public would differentiate. Anyway, the fact is that accident investigation is, in Spain, being carried out only by the police forces (sometimes even a pure reconstruction is asked from the courts), and it seems difficult to me to change this (I mean to let private persons have access to data of an accident).

FR To avoid confusion, only one name should be given and protected. In the public’s mind, either you can study accident reconstruction or you cannot. French mindset is on/off.

GB "Accident investigator" is a broad term which includes accident reconstructionists. It also includes road safety investigators (e.g. Otte’s group in Hannover), and "accident analyst" could be applied to them. "Accident analyst" should not be used to describe a reconstructionist, whatever his level of expertise. British lawyers would like to see the terms ‘engineer’ or ‘scientist’ attached to the higher qualified reconstructionists, so I would propose "accident reconstruction scientist" and “accident reconstruction engineer” as alternative titles for such people: they can choose which one is more suited to themselves.

PT Accident investigator - Averiguador de acidentes.

CH In my opinion a differentiation would be sensible. E.g. ‘Schadengutachter’ for German – the differentiation has to be distinctive in order to avoid confusion.

SK In my opinion, accident reconstruction expert reports should be prepared only by experts with academic qualification. Other experts can only provide assistance to some extent.

Responses to question 40: Comments on driving licence requirements

DE Standard car as well as motorcycle licence would be desirable due to their differing vehicle dynamics. Class C licence (trucks) not mandatory, but training in technology of commercial vehicles useful.

ES Regarding question 37 – no driving licence is required. Regarding question 38 – I don’t think a significant number of Spanish reconstructionists (if any) have driving licences other than class A and class B. My personal opinion (and I’ve considered that possibility in the past) is that obtaining a licence, without subsequent driving experience, hardly gives you any extra knowledge.

PL What for A, C licence obtaining twenty years ago without any practice?

FR Only B and A. Motorcycling involves complex links between machine (power,...), environment (weather conditions, roads,...), perception (fatigue, stature,...), etc. Those parameters are easier to handle in other examples (trailers, buses,...)

GB There is no requirement in the UK for an expert to hold a driving licence. All will, of course, have a B licence. If they have any others, they would mention it in their reports if it were relevant to the particular case.

CZ Some experts should be specialized on commercial vehicles.

FI There is no official requirement for the driver’s licence.

CH Practical experience is needed to assess dynamic vehicle behaviour.

SK It is very important that a reconstructionist has experience with other types of vehicles as well, especially motorbikes and trucks. Without possessing class A and C, a reconstructionist cannot provide the proper context. We have bad experience with pure theoreticians.

GR We consider possessing all classes of driving licences except passenger transport as necessary.

SE There are no full time working reconstructionist in Sweden now. That is the reason for no figures in the above questions. A degree in mechanical engineering would probably be the most common degree later when the profession is established.

Responses to question 42: Other ways in which a reconstructionist can document his expertise (e.g. through membership of a professional organisation), in the absence of certification

LV The court hiring the expert gives the reconstructionist expert status for the particular case he is hired for.

IT No certification is available in Italy at the moment. In every court there is a bulletin-board of experts for each area of expertise. Prerequisites to be register on the court’s bulletin-board could be specific technical expertise, to be part of a professional bulletin-board, and upright moral behaviour. In theory the judge or the prosecutor should hire an expert belonging to the court bulletin-board (but this rule is not strictly observed as the judge and the prosecutor can freely hire the expert with whom they have a fiduciary relationship).

ES As well as an academic degree, reconstructionists can attend private training courses which offer a diploma.
FR “Experts Judiciaires” are given their status by judges and are part of two official lists (a regional and a national one). These two titles are protected by law, but do not make mention of any academic degree. They are accredited for 2 years, after which they are checked.

GB Each time an ‘expert’ appears in a UK court, the court may accept or reject them as an expert, according to the information that is presented to them at the time. There is no official certification of court experts in the UK, but the Council for the Registration of Forensic Practitioners is beginning to fulfill a similar role, and they have a division in which police officers may register. Otherwise an expert will offer membership of professional bodies to support his claimed status: Institute of Traffic Accident Investigators (standard: City & Guilds certificate and good experience); Institution of Mechanical Engineers, Institution of Civil Engineers, Institute of Physics (degree level and probably Eur. Ing.); and some other lesser engineering institutes.

PT I’m personally a member of an international professional organisation, and get reconstruction training in other countries.

CZ In the Czech Republic experts are appointed by the Ministry of Justice or regional court and registered on an expert list (www.justice.cz). These experts can be certified by the Certification Body of the Institute of Forensic Engineering of Brno University of Technology (BUT) by the ÈSN EN ISO/IEC 17024. There are three professional organisations in the Czech Republic:
- EVU - National group CZ
- Chamber of court experts of the Czech Republic
- Association of experts and assessors of the Czech Republic

FI If he or she is employed by a well-known institution and has a suitable profession, his or her statement is more likely to be taken into account.

CH - Membership of the EVU
- Membership of the Swiss Chamber of Court Experts (who carry out certification as well, but of a general nature)

CY It is very important to be a member of Traffic Accident related Institutions. Engineering Bodies have a good record in court and CPD record. Recently the Engineering Chamber of Cyprus published a list of Expert Witnesses and Arbitrators. All these persons hold a 5 year Engineering Degree, and Accident Reconstruction is among the subjects of expertise.

LU The Expert Chamber of Luxembourg (Chambre des Experts du Grand-Duché de Luxembourg) is the umbrella group for all experts, one subgroup being the automobile expert (Experts en automobile). This group also includes accident analysts. However, membership with the Chamber is not required.

GR Proof of accident analyst training with DEKRA.

BE Admittance criteria remain unclear, apart from a careful investigation concerning moral integrity. So we can expect that only skilled people are called on, i.e. experienced automotive experts or engineers. Most automotive experts are members of a professional organisation (C.E.J.A.A.), but membership does not certify the member’s expertise.

DK You have to be accepted by the Ministry of Justice, which means being an Engineer and having passed several tests/ exams. Normally you have about 3 years of special training and practise.

SE Currently there is no certifying body, but there will be a Nordic organisation soon.

Responses to question 52: Satisfaction with monitoring of moral integrity

DE The assessment is sufficient. Yes, it should [be monitored more closely] - but how?

LV No [not satisfied].

PL No, I am not satisfied, should be on better level, but we don't know how.

CZ There are no problems in the Czech Republic.

CH I consider the assessment to be of importance.

LU Yes, police records should have to be checked every year. Furthermore more controls need to be in place to ensure experts are unbiased.

SK In the past, references from three independent experts were required. This is no longer the case. It had been a good idea; the candidate should have some respect for the experts.

GR The assessment of moral integrity has to be intensified.

DK Monitored approximately every two years.

AT YES, [I am satisfied], in my opinion a better assessment is hardly possible.

Responses to question 57: Description of the stamps/seals issued upon certification

LV The expert has to place both stamp and signature on each page of his expert report, as well as on any photographs included.

PL Can input number of certification and name of certification to his stamp.

AT Seal, used to sign written expert reports. Contains the name and the title ‘certified court expert’. May only be used after successful certification process.

CZ Name of the Expert and name of the Certification body, number of certified expert and area of specialisation.

SI The stamp is issued by the State authority responsible for accident analysts as an official proof of certification. Contains name, qualification and area of specialisation.

SK A stamp with the national emblem. It carries a similar weight to the stamp of, for example, a commissioner for oaths.

DK We did [use to have a stamp], it’s no longer used.

Responses to question 59: Reasons for the satisfaction rating given on certifying system

very satisfied ..........................

AT system works very well

satisfied ..........................

DE While certification is a sign of quality, it is not carried out in a uniform way. Also, certification not supported nor sufficiently lobbied for.

SI Regulated by law: university degree in a technical field, 5yrs of experience, exam, stamp and ID card.

neutral ..........................

DK Its all under reconstruction due to changes in the Ministry of Justice and the Ministry of Transportation.

dissatisfied ..........................

LU The expertise of a candidate is not sufficiently examined.
FR Favorize co-optation (Nomination through relationships), no real technical choice. Judges are overwhelmed with law cases and do not have time to review properly technical nomination details. No national view, only regional decisions.

CY Even though the Engineering Chamber of Cyprus assigns experts and arbitrators in various fields including reconstruction, this does not mean that a person with little or no qualifications cannot be accepted in court as an expert. The judges in our legal system listen to the various testimonies and make their own evaluations. Usually in their decisions they make comments on the expert statements. 

very dissatisfied -------------------------------

PL Certification according ISO norm, as certification of personnel is not a good way to recognise knowledge and experience. It is impossible to determine ability and intelligence which is necessary to experts' work.

NL For criminal law, certification for the police is provided by law, which is good. For civil law, a method of certification/membership of an expert bulletin board is still being worked on.

HU It would be necessary to liberalise the certification process.

LV The certification method falls short on several points, is incomplete. Court is unable to pay for further training of accident analysts.

GR There is no certification or other accreditation for accident analysts. So far, there is no examination of an analyst's expertise.

FI There is no certification nor education and training.

SE There is none [no certification].

Question 61, answer 'other' – details on other certification system preferred

PL Random comparison between report and the records available, or competency tests.

CH [Certification] through the federation of the particular professional group, and a state body.

CY Certification through a European Institution.

HU E.g. IQ certificate / Bonn.

Responses to question 71: Comments on ISO accreditation

LV ISO is not suitable for reconstructionists. A form of quality evaluation needs to be introduced! I have drawn up [such an evaluation] which I will be introducing at the EFA congress in Greece (www.efacongress.com).

PL Accreditation at ISO isn’t a good idea. It is impossible to check the ability of experts to prepare good expertises. Also if certification exists, it is crazy to have it renewed after such short period as 3 years. For old experts it should be lifetime or 10 years.

SI We don’t have an ISO accreditation of accident reconstructionists.

CY There is no experience in Cyprus on ISO accreditation but if such accreditation would improve the quality of work of the reconstructionist, I believe it is something to evaluate seriously.

HU There is no ISO accreditation in Hungary, only as of 5 years ago the IQ-Cert, formerly DVR-Cert.

AT At the moment, the ISO certification is irrelevant.

Question 94, answer ‘other’, occasions in which the expert is regularly called to an accident scene

LV expert decides whether to attend the scene

IT very rarely the case

ES only for research projects

PL important persons

FR Extremely severe accidents

CH regional differences / accidents through speeding

Question 95, answer ‘other’: more than one option for the hiring of an expert in a penal case

FR Judge in charge

ES a, b, c

PT a, b and c

CH a, b, c

IT a, c

NO a, c

SK The expert can also be called to court by one of the parties [= a, c]

GR a, but b is also possible

CZ Police

NL The police carry out the primary work; a lawyer can consult the advice of a private expert

Question 98, answer ‘yes, in the following situations can findings in a private expert’s report be kept confidential’

IT Things that are not favourable to the party

PT During police investigations

NL He always may, but with the risk of not being believed again in the future

CH Solely has to answer questions

LU Ethically not justifiable!!

Question 101, Answer ‘other’ on requirement of oath in a penal case

IT Only the court expert.

CH No oath, a false report can be punished with a fine or up to five years in prison.

Responses to question 112: Reasons for the preference of the availability of both joint and private expert systems

DE For a severe accident, two experts are better, while for all minor accidents, one expert should suffice.

NO Different solutions in different types of cases.

FR Providing 2 insights is intellectually beneficial however choice should always be left to litigants.

PT Freedom of choosing the best way of defence - expert is impartial

LU Were there only competent and unbiased expert, one joint expert would be preferable. This should be aimed at but is sadly not the case. Therefore, the parties should at least have the possibility to defend themselves.

BE The public prosecutor has an expert. Each party has an expert and sometimes the judge calls another expert. No matter who’s asking you to work: you give an expert opinion.

GB [not for the availability of both systems] It must be understood that the experts on each side must give their true unbiased opinions. They must not act simply to support their client’s case. Generally this works, but there are a few notori-
ous individuals who are blatantly biased - usually the courts
detect this and reject their evidence.

Responses to question 123: Other professions carrying out
tasks which fall into the working areas of reconstructionists

DE Other vehicle experts
LV Experts from the department responsible for road traffic, fire
officers
NO Police, official car inspectors, insurance people
ES Police (calculating speeds, gathering evidence, insecure
loads); technical inspectors (general vehicle checks); physi-
cians (biomechanics); technical adjusters (nullification of sale,
calculation of repair costs)
PL Forensic medicine, Technical University staff
FR Expert d’assurance, expert privé
GB Forensic materials scientists or metallurgists; specialist vehicle
technicians; biomechanical researchers; insurance assess-
sors
PT Accident investigators, Repair costs technicians
Police, Official laboratories
Private engineers, Private organisations
CZ Experts for damage calculation
FI Traffic / highway engineer, police, technician
CH Police experts, damage assessors, insurance people
CY Engineers and Technicians working for the Ministry of
Transport - Department of Vehicle Inspections
SK Physicians, police, insurance people
HU Damage assessors
GR Traffic engineers from the National Technical College,
damage assessors
BE Medical experts, automotive experts
DK Mechanics, road authorities
SE Police determining causes, Research determining most things
checked above, technical check is made by Bilprovning (com-
pany), repair costs are made by insurance company experts
AT Insurance assessors, police

Responses to question 130 - other resources used

LV Experience with similar cases or expert reports
GB Telephoning/e-mailing me and expecting free advice!
CH Carrying out their own tests
GR The answers to question 124 relate to DEKRA experts. Other
experts in Greece use specialist literature and the internet as
a resource.
BE Carrying out our own test (5th wheel, decelerometer, V-BOX),
total station
AT EES catalogues

Responses to question 133 – reconstructionists exchanging
information with or drawing resources from other countries

LV No exchange, but I would like to receive information from
Germany and Switzerland
NO Austria, Denmark
IT Germany, USA
ES 1. USA: SAE – Accident Reconstruction Paper
   2. Austria: PC Crash and other data from DSD, which includes
      information developed in Germany, Hungary, Slovenia etc.
PL Austria, Slovakia, Czech, Germany, USA, UK
FR US (DRI California); Austria (DSD Linz)

GB United States (especially the SAE), Canada, Australia, Germany
etc.
CZ AREC
SI Slovenia
NL Germany, Austria, Switzerland, the English-speaking coun-
tries
FI USA, Germany, Great Britain, Holland, New Zealand
CH Germany, various others
CY United States, Canada, Australia, Italy
LU Austria, Germany
SK Czech Rep, Germany, Hungary, Austria
HU Germany, Austria, Slovakia, Slovenia
GR Germany
BE No possibilities. You have to follow training from AREC, EVU
or use books and specialist literature.
DK Germany, Norway
AT Germany, Switzerland

Responses received to question 134:
Availability of further/ongoing training:

LV I run a private school for traffic experts and their specialist
training, and used to run training courses at the agricultural
university.
NO None
IT Very poor, as far as I know. Probably some courses from one
or two universities.
ES Private courses from research institutes and universities
(not official or academic degrees but specialisation training
courses)
PL Post graduate studies in four towns. Some extra courses.
FR ITRA (Claude Tarrière)
GB events organised by ITAI ; private courses (Accident
Investigation Training Services, TRL etc.); occasional courses
from manufacturers (Michelin, Siemens VDO)
PT None
CZ PhD study in Forensic Engineering at Institute of Forensic
Engineering of Brno University of Technology (in Czech,
Slovak, English or German language)
SI No possibilities
NL little
FI only a very basic training
CH specialist conferences
CY Very good possibilities
LU none, only abroad
SK Full postgraduate course (4 semesters, i.e. 2 yrs) leading to
an accident reconstructionist qualification in existence. PhD
study for accident reconstructionist and other experts also
available, as well as shorter training courses on specialist
subjects, e.g. pedestrian accidents, impact analysis...
HU Specialist seminars (e.g. IbB-Hungary) and other events
GR none
BE No possibilities. You have to follow training from AREC, EVU
or use books and specialist literature.
DK Depends on where he/she is employed.
SE None at the moment but Chalmers University is planning to
set up a course in further training.
AT Specific masters degree, various seminars, lectures at Graz
Technical University.
Responses to question 135: possible planned changes

LV Yes. I organise training courses for driving school teachers, professional drivers, damage assessors, and would like to offer training with certification for accident analysts as well.

IT Probably yes. There is a commission (under control of a private body) which could arrive at a definition of the professional knowledge.

PL At present a new government act (Justice ministry) is being prepared, concerning experts from all professions.

GB Council for the Registration of Forensic Practitioners (www.org.uk) registers scientist and police investigators. ITAI is working on links with CRFP to raise the standards of both organisations’ requirements.

SI We would like to set up an official university degree for accident reconstructionists.

NL Certification / membership of a professional body for private reconstructionists

FI There is discussion how to make the possibility of reconstruction work acknowledged by the legal system and the status of a reconstructionist official in courts.

LU The professional profile of the ‘expert en automobile’ has been defined by law. As this isn’t sufficiently distinguished from that of an accident reconstructionists, that leaves a certain grey area. Some ‘expertes en automobile’ are trying to add reconstruction to their profile!

HU Yes, as of 2006, the expertise required of a reconstructionist is set down by law.

BE No. But we recently received a questionnaire from the authorities to know more about our job (qualification, training, mission, ...)

DK Yes, as the area up to now has been taken care of only by the State.

Responses to question 136: General comments and remarks on the issues in the questionnaire

FR In the past, no Academic Reconstructionists existed in France so the expression ‘academically qualified reconstructionists’ refer to “Expert judiciaire”, the only persons accredited by law to carry out Accident Reconstruction in Courts.

GB Do not underestimate the abilities of the police officer who does not have a degree but does have the City & Guilds training and a lot of experience!

FI 100% of fatal accidents are investigated by the investigation teams (Query I - Finland). Some of these accidents are reconstructed as we understand it here. These reconstructions are only for traffic safety purposes (personal info etc. is hidden). Much lesser reconstructions are made for litigant parties or insurance companies etc. Total maybe 30 reconstructions / year.

LU Furthermore, in Luxembourg we have the unique situation that there are only very few indigenous reconstructionists, and that frequently experts from abroad are used. Unfortunately, checks regarding their competences are very basic.
4. Translation of the Proposal into most EU languages
Czech

Návrh pro Evropskou směrnici v analýze nehod:

Následující text je zkorigována a zeditovaná verze dohody dosažené na 2. workshopu Query, který se konal 20. října 2005 v Bratislavě.

1. Prohlídka místa nehody vs. Analýza nehod

Pokud se týká nehod vozidel, bylo by třeba dělat rozdíl mezi dvěma typy práce:

- sběr důkazů a dat na místě nehody včetně měření (např. zpo- malení), zachování mizejících stop a zjištění svědků,
- rekonstrukce nehody, tj. použití vědeckých metod za účelem zjištění závěrů z důkazů shromážděných na místě nehody.

Ve většině evropských zemích provádějí první druh práce policisté nebo policisté se speciálním školéním. Navrhujieme je nazývat jako speciálně školene pro - vyšetřovatele místa nehody.

Druhý typ práce by měl být prováděn osobami s academickou kvalifikací. Navrhujieme tento druh práce nazývat rekonstrukce nehad a jasně ji rozlišit v souvislosti s profesí od první pojmenované skupiny.


Nizozemí a Velká Británie nesouhlasí s požadavkem akademické kvalifikace:

V těchto zemích, kde systém sběru dat z místa nehody a jejich analýzy provádějí policejní autority, by jim mělo být poskytnuto speciální školení a vzdělávání.

Pokud by bylo vyšetřování velmi složité, nebo by zahrnovalo aplikaci fyzikálních zákonů nebo složité matematiky, která je druhou stranou ke zkušenosti vyšetřujících důstojníků, důkaz musí být validován vhodným expertem (buď policejním důstojníkem nebo naopak tím, kdo má nutné znalosti a zkušenosti). V takových případech musí být nastolena rovnováha mezi těmi, kdo mají akademickou kvalifikaci a těmi s nepostradatelnými zkušenostmi.

2. Chránný titul pro “nehodového rekonstruktéra”

Ve většině evropských zemí je běžné používat pouze jednoho příbraného technického znalec v souřadním řízení, ale v některých zemích jsou obvykle dva znalci, každý pro jednu stranu sporu. Použití pouze jednoho znalec v procesu vyžaduje na znalci těžké požadavky týkající se jeho kvalifikace a morální bezúhonnosti: souzení je založeno na závěrech přednesených rekonstruktérem, které laická osoba nemůže do detailu vyhodnotit.

Aby se garantovala kvalifikace a morální bezúhonnost je třeba, aby vznikl systém kontroly kvality. Osoby, které by byly certifikovány tímto systémem kontroly kvality, by měly být oznámeny chráněným titulem (a raději také ochranným razítkem nebo pečeti), který by umožnil laickým osobám rozlišit je od samo-prohlášených expertů.

Tento systém by byl srovnatelný s používáním titulů v jiných profesích, např. u doktorů medicíny a právniků.

3. Zkoumání místa nehody

Shromáždování důkazů na místě těžké dopravní nehody je úkol, který v sobě nese mnoho odpovědnosti a je třeba tedy speciálně vycvičených osob. Němůže být prováděn obyčejnými policejními důstojníky.

Obecně, vyšetřovatel místa nehody nepotřebuje akademickou kvalifikaci, pro shromáždování důkazů se může, po absolvování vhodného školení, spolehnout na připravený seznam směrnic a požadavků.

V případech komplikovaných nehod může být nicméně částečně rekonstrukce nehody na místě provedena pomocí shromáždění důkazů a poté přizvání přítomnosti “rekonstruktéra”.

4. Kvalifikace “nehodového rekonstruktéra”

Rekonstrukce nehody (definována výše) často vyžaduje hluboké znalosti fyziky a technických zákonů, kterých může být obecně dosaženo pouze technickým studiem. Univerzitní titul ve stojném inženýrství, fyzice nebo srovnatelném oboru je proto předpokladem, aby se školní titul konstruktéra nehad.

K výkonu tohoto typu práce však nepostačuje pouze univerzitní vzdělání samotné. Je požadováno speciálních teoretických a praktických znalostí v této oblasti.

Co se týká teoretické kvalifikace, postgraduální kurzy jsou jediným možným řešením k jejímu dosažení a měly by být doplněny profesním školéním. Na druhé straně praktických znalostí může být dosaženo praktickou prací v této oblasti o délce minimálně 3 let. Dále by měl rekonstruktér mít alespoň pracovní základní znalost právního systému v zemi, kde vykonává činnost, včetně zákonů a pravidel.

Rekonstruktér by měl vlastnit alespoň řidičský průkaz třídy B. Je doporučeno mít řidičský průkaz také pro třídy A a C1-CE. To, že osoba vlastní řidičský průkaz neznamená, že má dostatečné znalosti fyziky a technických zákonů, kterých může být obecně dosaženo pouze technickým studiem. Universitní titul ve stojném inženýrství, fyzice nebo srovnatelném oboru je proto předpokladem, aby se školní titul konstruktéra nehad.

K výkonu tohoto typu práce však nepostačuje pouze univerzitní vzdělání samotné. Je požadováno speciálních teoretických a praktických znalostí v této oblasti.

5. Certifikační proces

Kandidáti, kteří by si přáli, aby dostali certifikaci jako rekonstruktéři, by měli projít přezkoušením, které by zhodnotilo jejich speciální znalosti na poli rekonstrukce nehod.

Takové přezkoušení by mělo provádět limitovaný počet akreditovaných institucí. Bylo by bezpodmíněně nutné, aby školí a přezkoušení nedělaly stejné instituce, pokud výsledek přezkoušení kolídne s finančními zájmy.

Certifikace rekonstruktéřů by měla být úředně oznámena a certifikace by měla být součástí srovnatelných právních předpisů.

6. Technické znalosti na poli rekonstrukce nehod

Speciální znalosti na poli rekonstrukce nehod by se měly skládat z:

- kolizní mechaniky,
- výpočtů času a dráhy,
- základních znalostí o střetu,
- technických aspektů zranění, biomechaniky a mechaniky zranění,
- základní znalostí lidského faktoru,
- konstrukce vozidel, obzvláště systémy řízení a brzdění, dynamika vozidel,
- základní znalost simulačních technik,
- základní znalosti technologie oprav a výpočtů nákladu na opravu,
- technické posuzování pojistného podvodu,
- digitální fotografie a techniky digitálního zpracování (korekce / manipulace),
- silniční infrastruktury,
- základy kriminalistiky a interpretace důkazů,
- znalosti potřebné k provedení analýzy nehody.

7. Odměňování

Odměňování rekonstruktérů nehod přibraných soudem by mělo být adekvátní, tj. srovnatelné na volném trhu.

8. Rekonstruktér nehod vs. Expert pro odhad nákladů na opravu

V mnoha evropských státech není profese experta na odhad nákladů na opravu jasně odlišena od analýzy nehod. Tato situace je usnadňována profesním titulem jako “automobilní, vozidlový expert”.

Zatímco při odhadu nákladů na opravu je rozhodnutí požadováno v konečném stavu, když je auto poškozeno, při analýze nehod je obvykle potřeba stanovit dynamické procesy (například k přiblížení vozidel do střetové polohy). Kromě dalších potřebných znalostí v různých oblastech, které analýza nehod vyžaduje, jsou tyto dynamické procesy tím, čím tuto oblast odlišují od jiných oblastí vozidlové expertízy.

Tedy, expert pro odhad nákladů na opravu nepotřebuje mít žádné znalosti z analýzy nehod a nehodový rekonstruktér zase nepotřebuje mít pro aktuální nehodu znalosti z oblasti stanovení nákladů na opravu, ale mohl by být užitečný, pokud by měl rekonstruktér alespoň základní znalosti stanovení nákladů na opravu, jako potřebu pro částečné posouzení, které se občas naskytne.
Danish

Forøg til europæiske retningslinjer for færdelsesuheldsudredning:
Det følgende er den verificerede tekst af aftalen som indgået på den 2. konference i EVU, som afholdt i Bratislava d. 20. oktober 2005.

1. Sporsikring versus uheldsudredning
Der anbefales en adskillelse af to begreber vedrørende færdelsesuheldsudredning:
- sikring af data og beviser på åstedet, herunder opmåling og målinger (f.eks. friktionsmåling) og sikring af andre ikke blivende spor samt interview/afhøring;
- rekonstruktionen, hvor videnskabelige metoder anvendes til at drage konklusioner på baggrund af de indsamlede oplysninger.

I de fleste lande i Europa udføres sporsikringen af politiet, om muligt specialuddannelser til formålet. Vi anbefaler at benævne en sådan særligt uddannet person en åstedsanalytiker.

Øvrigt arbejde forder en akademisk uddannelse, og personen kaldes uheldsudreder. Der anbefales en klar adskillelse af de to typer af arbejdsmomræder.

I det følgende anvendes udtrykket uheldsudreder, og vi anbefaler at man generelt undlader at benytte termen som "teknisk ekspert" eller "køretøjs ekspert".

Holland og UK udtrykte uenighed omkring adskilelsen af opgaver, da det i disse lande er politiet der varetager begge funktioner. Efter det oplyste er politiet efteruddannet i opgaveløsningen.


4. Udereders kvalifikationer
Udereders arbejdse vil jævnligt medføre behov for kendskab til at anvende fysisk og matematisk kunskab, hvilket normalt alene kan erhverves ved tekniske studier. Uddannelse der medfører en teknisk universitetsgrad, ingenier eller fysiker vil derfor være en nødvendig forudsætning for at blive uheldsudreder.

Uanset en teoretisk velfungerende uddannelse er området så specielt og kompliceret, at særlig efteruddannelse i praktisk uheldsudredning tillige er nødvendig.

I den følgende forløb i denne samtale vil spørge politiet, om de i det følgende anvender udrednings- og praktisk uafhængig ekspertise. Vi anbefaler, at benævne en teknisk viden

Viden på specialistniveau bør mindst omfatte:
- kollisionsmekanismer
- vej-tid beregninger
- basisviden om kollisionsstager
- tekniske aspekter vedrørende biomekanik og uheldsrelationer
- kendskab til den menneskelige faktor
- køretøjs teknologi, såvel funktionalitet som dynamik
- kendskab til rekonstruktions teknikker
- kendskab til reparationsteknikker og omkostingskalkulatorier
- teknisk bevisførelse ved assurancesvig
- anvendelse af digitale medier og disse redigeringer
- infrastruktur
- kendskab til efterforskning og sikring af beviser, herunder
- opfyldelse af alle krav der stilles til åstedsanalytikeren
7. Honorering

Honorering i forbindelse med udmeldelse af domstolene bør være sammenlignelig med den honorering, der skal på det private, liberale marked.

8. Uheldsudreder kontra taksering / køretejsvurdering

I flere europæiske lande skelnes der ikke mellem en vurderingsekspert og en uheldsudreder. Således anvendes titler såsom "køretejsekspert", "bilsagkyndig" mv., hvis funktion væsentligt adskiller sig fra uheldsudrederens arbejde ved alene at skulle foretage en vurdering af køretejets stand her og nu, mens udrederens arbejde indbefatter kinetiske og kinematiske vurderinger og beregninger.
Dutch

**Voorstellen tot Europese richtlijnen bij de reconstructie van verkeersongevallen.**

_De volgende tekst is de uiteindelijke versie van de resultaten van de tweede QUERY Workshop, 20.10.2005, Bratislava._

1. **Onderzoek plaats ongeval vs. reconstructie van het verkeersongeval**

   Bij de afhandeling van aanrijdingen is onderscheid te maken tussen:
   
   - Onderzoek op de plaats van het ongeval; het betreft hier het opmeten en vastleggen van sporen en schade, onderzoek voertuigen, maar ook het opnemen van verklaringen van betrokken partijen en getuigen.
   - Reconstructie; op basis van de resultaten van het onderzoek op de plaats ongeval en van het voertuigonderzoek vindt volgens wetenschappelijke methoden de feitelijke reconstructie (analyse) van het verkeersongeval plaats.

   In de meeste Europese landen wordt het onderzoek op de plaats van het ongeval uitgevoerd door de politie c.q. ambtenaren/personen die daartoe speciaal zijn opgeleid. Voorgesteld wordt deze speciaal getrainde personen in de toekomst als onderzoeker verkeersongevallen te noemen.

   Werkzaamheden in het tweede werkveld, de reconstructie, zouden uitgevoerd moeten worden door academisch geschoolde personen.

   Voorgesteld wordt, dit werkgebied „verkeersongevallenreconstructie“ of „verkeersongevalsanalyse“ te noemen („accident reconstruction“), en deze discipline duidelijk van het beroep van onderzoeker verkeersongevallen te onderscheiden.

   Hieronder wordt de benaming reconstructionist/analist gehanteerd, voor personen werkzaam binnen dit werkgebied. Voor elk land afzonderlijk kunnen in dat land gebruikelijke en vergelijkbare benamingen voorkomen, als deze maar een gelijke betekenis hebben, zoals reconstructionist in Engeland Unfallanalytiker in Duitsland.

   Het gebruik van begrippen zoals „technischer Experte“ of „KFZ-Experte“ zullen vermeden moeten worden, omdat deze begrippen voor uitleg van meerdere omschrijvingen vatbaar zijn.

   Nederland en Groot-Britannië stemmen niet in met de minimum eis van academisch geschoolde personen.

   In deze landen, waar een systeem geldt waarbij het onderzoek op de plaats van het ongeval en de reconstructie/analyse door speciaal daartoe opgeleide politie-ambtenaren wordt uitgevoerd, dient dan wel deze speciale opleiding gewaarborgd te worden.

   In zaken met een meer complex fysisch en mathematisch niveau kan en wordt in deze landen een beroep gedaan op reconstructisten/analisten, die over de nodige (hoger beroeps) opleidingen en ervaringen beschikken. De afweging voor zo’n ondersteuning dient per geval plaats te vinden.

2. **Beschermd titel voor de reconstructionist/analist**

   In de meeste Europese landen wordt in z’n algemeenheid één deskundige ingezet, de opdrachtgever is de rechtbank. In enkele landen wordt door elke betrokken partij een deskundige ingezet. Alleen wanneer een getuige-deskundige wordt benoemd worden hoge eisen gesteld op het gebied van kwaliteit en moraliteit. De schuldvraag wordt dan gebaseerd op de conclusies van de deskundige, welke conclusies door een leek niet getoetst kunnen worden.

   Om kwaliteit en morele integriteit te garanderen dient een controle systeem ingesteld te worden. Personen die voldoen aan de eisen gesteld binnen dat kwaliteitscontrole systeem krijgen een beschermd titel (en indien nodig ook een beschermd insigne), zodat een leek de mogelijkheid heeft, deze personen van zich zelf benoemde deskundigen te onderscheiden.

   Dit systeem zou vergelijkbaar kunnen zijn met verplichtingen van beschermdere titels in andere beroepen zoals bij artsen en advocaten.

3. **Onderzoek verkeersongeval**

   Het vastleggen van sporen op de plaats van het ongeval is een taak die hoge verantwoordelijkheid vraagt en om deze reden speciaal opgeleid personeel vragt. Doorgaans kan deze taak niet uitgevoerd worden door personen met een basis politieopleiding.

   In z’n algemeenheid is voor de onderzoeker, belast met de ongevalsoopname, geen academisch niveau noodzakelijk, omdat de ongevalsoopname voor een groot gedeelte volgens richtlijnen uitgevoerd kan worden, dan vindt doorgaans ook nog geen reconstructie/analyse plaats.

   Bij een zeer complexe aanrijding kan echter bij de opname van de sporen een (deel) reconstructie/analyse op de plaats van het ongeval wenselijk zijn. In zo’n situatie is het raadzaam een reconstructionist/analist ter plaatse te vragen.

4. **Kwalificatie van de reconstructionist/analist**


   Reconstructionisten dienen ten minste in het bezit te zijn van rijbewijs B. Het bezit van rijbewijs klasse A en C1-CF wordt aanbevolen. Het bezit van een rijbewijs in een bepaalde klasse garandeert in z’n algemeenheid overigens nog niet, dat de reconstructionist over voldoende rij ervaring beschikt, maar zonder eigen rijervaring kan het gedrag van een bepaald voertuig dan wel de bestuurder daarvan niet beoordeeld worden.
5. Certificering

Kandidaten, die een certificering als reconstructionist/analist aanvragen dienen een beproeving/examen af te leggen waarin deze hun deskundigheid op het gebied van de ongevalsreconstructie dienen aan te tonen.

Deze beproevingen/examens zullen door een beperkt aantal daarvoor in aanmerking komende instituties uitgevoerd mogen worden. Hierbij is het zeer belangrijk, dat de opleiding en beproeving niet door het zelfde instituut wordt uitgevoerd, dit ter voorkoming van financiële belangen.

De geldigheid van de certificering dient qua tijd begrenst te zijn. Na ongeveer 5 jaar dient een hertoetsing plaats te vinden. In drastische gevallen dient het instituut de mogelijkheid te hebben de certificering in te trekken. In dergelijke gevallen moet de reconstructionist verplicht (kunnen) worden aan verdere opleidingen deel te nemen om de certificering te behouden.

6. Bijzondere kennisgebieden ongevallenreconstructie

De ongevallenreconstructie houdt de volgende bijzondere kennisgebieden in:

- Botsmechanica
- Weg-tijd-betrachtingen
- Grondige kennis der biomechanica en energieopname van voertuigen
- Grondige kennis der mechaniek en biomechanica in relatie tot letsel
- Grondige kennis op het gebied van de psychologie van bestuurders
- Voertuigtechniek, met in het bijzonder gerelateerd aan de techniek van stuur- en remsystemen, alsook op het gebied van voertuigstabiliteit
- Grondige kennis van simulatietechniek
- Grondige kennis van schade reparatie en schadecalculatie
- Benadering verzekeringsfraude met voertuigen vanuit technische zin
- Digitale fotografie en beelverwerkingsmethoden
- Infrastructuur der wegen
- Grondige kennis van opsporen en interpreteren van bewijsmiddelen
- Alle kennis, nodig ten behoeve van het vastleggen van sporen op de plaats ongeval

7. Vergoeding kosten

De vergoeding der kosten gemaakt door de reconstructionist in gerechtelijke opdrachten dient in overeenstemming te zijn met de vergoedingen die gelden binnen de vrije markt.

8. Reconstructie vs schadecalculatie

In vele Europese landen wordt het beroep, waarin men zich bezig houdt met calculatie van schade na het ongeval, ook wel genoemd met titels als „KFZ-Sachverständiger“, niet duidelijk onderscheiden van de reconstructionist.

Terwijl er bij de schadecalculatie wordt uitgegaan van een blijvend schadebeeld ontstaan ten gevolge van een aanrijding, is het bij de reconstructie/analyse gewoonlijk nodig dynamische processen te verbinden (bijv. de nadering van twee voertuigen tot aan de plaats van de botsing). Afgezien van alle aanvullende kennis, die de reconstructie/analyse op verschillende gebieden vraagt, is deze dynamische wijze van benadering/denkwijze een wezenlijk aspect, dat de reconstructie/analyse van andere vakgebieden binnen het voertuigwezen onderscheidt.

Verder behoeft een deskundige belast met schadecalculatie geen kennis te hebben van de ongevalsreconstructie. Ofschoon de reconstructionist voor de eigenlijke reconstructie/analyse geen kennis van schadecalculatie behoeft, kan kennis van deze calculatie behulpzaam zijn, in die landen waar de reconstructionist in een rechtzaak ook gevraagd wordt een bestaande schadecalculatie te beoordelen.
1. Jälgede fikseerimine önnetusjuhtumi toimumise kohas vs. önnetusjuhtumi rekonstrueerimine

Liiklusönnustuste puhul tuleks teha vahet kahe tegevusvälja vahel:

• Jälgede fikseerimine önnetusjuhtumi toimumise kohas, kaasa arvatud möötmised (nt pidurduskiirus), kergestikaduvate jälgide fikseerimine, samuti asjaosaliste ja võimalike tunnistajate kütislemine
• Önnetusjuhtumi rekonstrueerimine, s.t teaduslike meetodite kasutamine, et teha järeldisi önnetusjuhtumi toimumise kohas dokumeeeritud jälgedest

2. Riiklikult tunnustatud kutsekvalifikatsioon önnetusjuhtumi rekonstrueerijatele

Enamikus Euroopa riikides teostab jälgede fikseerimist poliiselt, eelisalt vajaliku ametniku toetusse, kes on saanud eriväljaõppe. Me soovitame nimetada selliseid eriväljaõppe saanud isikuid tulevikus üksikasjale võtta ja vastavalt nende oskustega poolt kutsuda juhul, kui aga mõned üksikasjad on tulevikus küll tõendamiseks, kes kohtusid tulevikus küll tõendamiseks, kes kohtusid.

3. Önnetusjuhtumi uurimine

Jälgede fikseerimine önnetusjuhtumi toimumise kohas on üks veidi tõrkepäraste, mis on erinevalt lähedastele sõidukitele. Önnetusjuhtumis ühisest põhjast meie, kes on laste ründamise saanud osa sõidukitele.

4. Önnetusjuhtumi rekonstrueerija kvalifikatsioonid

Önnetusjuhtumi rekonstrueerija kataloog on üks võimalikke lahendusi, mis võimaldab ründatud õnnetusjuhtumi toimumise kohast mõõta ja kogu tegevusvälja aktiivselt tõlgida.

Alljärgnevalt kasutatakse seda tegevust teostavate isikute kirjeldamiseks

Väga kompleksse önnetusjuhtumi puhul võib aga jälgede fikseerimist aidata läbi viia osake tasud.
5. Sertifitseerimine

Kandidaadid, kes taotlevad sertifitseerimist önnetusjuhtumi rekonstrueerijatega, peaksid sooritama eksami, mille käigus neil tuleb tõendada oma õnnetusjuhtumi rekonstrueerimise osas eiratamisi.

Seda laadi eksameid peaks läbi viia piiratud arv akrediteeritud institutsioonil. Sealjuures on vajalik, et koolitust ning eksamit ei korraldaks selle üks ja sama institutsioon, juhul kui eksamitulemustega seonduvad ka finantshuvilised hoiud.


6. Eriteadmised önnetusjuhtumi rekonstrueerimisest

Eriteadmised önnetusjuhtumi rekonstrueerimise vallas peaksid sisaldama järgmisi punkte:

- kokkupõrke mehaanika
- teekonna ja aja vaatlused
- põhiteadmised biomehaanikast ja sõidukite energiakulust
- põhiteadmised biomehaanikast ja sõidukite seoses vigastustega
- põhiteadmised sõidukijuhi psühholoogiast
- sõidukitehnik, eriti seoses juhtimis- ja pidurdusüsteemide
tehniliste ehitusdetailidega, samuti sõiduki stabilisusega
- põhiteadmised simulatsioonitehnikast
- põhiteadmised avarii läbi teinud sõiduki remontitehnikast
- kulu kalkulatsioonist önnetusjuhtumite järel
- kindlustuskelmuse tehniline väljaselgintamine
- mootorsõidukitel
- digitaalfotograafia ja pilditöötlusmeetodid
- liiklusteede infrastruktuur
- põhiteadmised kriminalistikast ja tõendusvahendite
hindamisest
- kõik teadmised, mida vajatakse jälgede fikseerimiseks
- önnetusjuhtumi toimumise kohas

7. Töötasustamine

Kui önnetusjuhtumi rekonstrueerija töötab kohtu tellimusel, peaks töötasu olema vastuvõetav, s.t ühes suuruses tasuga, mida pakutakse vaba tööturu tingimustes.

8. Rekonstruksioon vs. remondikulude kalkulatsioon

Paljudes Euroopa riikides ei eristata ametit, mis tegelikult õnnetusjuhtumi rekonstrueerimiseks nõuavad. Antud olukord tarnab võimalusi, et samaselts tegutsevate ajalooliste ja teaduslikke aspektide jaoks. Tähelepanelikult on viimaseid skeemide ja rakendusi, mis on täielikult ühendatud mitmete erinevate töövõimete ja taolineid. Kui önnetusjuhtumi rekonstrueerimise teadmised on juba saadud, siis vajab edasi edukaks olla, et seda edastada ja kasutada edukalt.
Finnish

Ehdotus ohjeistukseksi onnettomuuden rekonoistuinnaisssa:

Seuraava teksti on oikoluettu ja valmiiksi toimitettu versio Bratislavassa lokakuun 20. päivänä 2005 pidettyssä toisessa QUERY Workshopissa saavutetuista yhteisistä näkeyksistä. (Epävirallinen käännös, jossa on pyrittä seuraamaan alkuperäisen, englanninkielisen, tekstin rakennetta, eikä niinkään pyrittä hyvään suomeen tallkaa tässä asiakirjassa mainittujen eri alojen tyypillisin ilmaisuihin ja aiunion esittämistapoihin. – Timo Suuronen –)

1. Onnettomuuspaikan tutkinta vs. Onnettomuuden rekonoistuinta

Ajoneuvojen onnettomuuksia koskien seuraavanlaiset tehtävät tulee erottaa toisistaan:

- todisteiden ja tietojen hankinta onnettomuuspaikalta, mukaan luettuna mitataaminen (kuten hidastuvuuden), lyhytestoistien todisteiden taltoiointia ja haastattelut
- onnettomuuden rekonoistuinti eli tieteellisten menetelmien käyttö tarkoituksena muodostaa johtopäätöksiä onnettomuuspaikalta kerättyjen asiantuntijoiden perusteella

Useimmassa Euroopan maissa ensimmäisenä syystä tehtäväksi arvioitiin poliisi, mielemmillä erityiskoulutuksilla. Ehdotamme, että niin koulutettuja henkilöitä kutsutaan onnettomuuspaikan tutkijaksi.

Toisen röyhmän tehtävänä tuli suorittaa akateemisen pätevyyden omaava henkilö. Ehdotamme, että tämän tyypistä työtä kutsutaan onnettomuuden rekonoistuimiksi, ja että sen mukainen ammatti erotetaan selkeästi ensin mainitusta ryhmästä.

Seuraavassa käytämme termiä rekonoistija, rekonoistuinti, tai vastaavaa paikallisen ilmapiirin kielen termiä, joka kuuluu suomalaisten ja muu paikallisten kielen väestön käytöstä. Termien kuten "tekniikan asiantuntija" tai "ajoneuvotekninen asiantuntija" käyttyä tuli välittää, koska niissä on epämääriästä ymmärrystä.

Alankomaan ja Iso-Britannia eivät hyväksyneet akateemisen pätevyyden vaatimusta, vaan niin kutsutut lapsikoulutuksella. Ehdotamme, että niin koulutettujen henkilöiden kutsutaan onnettomuuspaikan tutkijaksi.

Kun kyseessä on onnettomuus geenin onnettomuus, sen (osittainen) rekonoistuin onnettomuuspaikalla vaikuttaa todisteiden keruamiseen ja niiden, jotka ovat jatko-opinnot, joka olisi suotavampaa kuin pelkästään työn ja sen tulostamaa.

2. Suojaaju nimike onnettomuuden rekonoistuijalle

Suurimmassa osassa Euroopan maita oikeuskäytäntöissä on tavallisin yksi ("yhteinen") tekninen asiantuntija. Joissakin maissa on tavallista, että asiantuntijoita on kaksi, yksi kullakin asiantuntijan osapuolella. Yhden ainoan asiantuntijan käyttö oikeuskäytäntöissä asettaa vakavia vaatimuksia asiantuntijan pätevyydelle ja moraaliselle riippumattomuudeelle: syyllisyydestä perustuu rekonoistujan


Tämän järjestelmän tulisi olla vastaavanlainen ryhmä, joka valmistaa muidenkin järjestelmien valmistuttavaksi. Seuraavassa käytämme termiä onnettomuuspaikan tutkinto.

Onnettomuuspaikan tutkintoa on suoritettava osittain poliisilla ja jaettain erityiskoulutuksilla, joissa on yksityiskohtaisesti tarkastettavaa ja niin menettelyä, että niin kutsuttavaa "oma-tekijöistä" asiantuntijoista.

3. Onnettomuuspaikan tutkintta

Tutkintatodisteet vaatii kahden eri alojen tutkinnon suorittamista: seuranlan tutkintaa ja sen mukaisen käyttöä onnettomuuspaikan tutkintaa.

4. Onnettomuusrekonstruoijan pätevyyden tehtävät

Pätevyyden tehtävät onnettomuusrekonstruoijan osana, ja se tulee suorittaa kahden eri alojen tutkinnon perusteella. Seuraavassa käytämme termiä onnettomuusrekonstruoijaksi.

Kadonnutat, jotka haluavat saada rekonoistuoijan sertifikaatin, tulee suorittaa rekonoistuoietta osaltaan ja tulee tässä osaltaan käyttää rekonoistuista asioita ja niiden mukaan suorittamaa. Seuraavassa käytämme termiä onnettomuusrekonstruoijaksi.

5. Sertifiointiprosessi

Kadonnutat, jotka haluavat saada rekonoistuoijan sertifikatit, tulee suorittaa rekonoistuoietta osaltaan ja tulee tässä osaltaan käyttää rekonoistuista asioita ja niiden mukaan suorittamaa. Seuraavassa käytämme termiä onnettomuusrekonstruoijaksi.
tapauksissa sertifioinnin myöntäneen tahan tulee voida perua osoittaa sertifiointi. Tällaisen tapahtuessa sertifioitu rekonstruoijan tulisi velvoittaa osallistumaan lisäkoulutukseen pysyakseen sertifioituna.

6. Onnettomuuden rekonstruktioalan teknilliset tiedot ja taidot

Onnettomuuden rekonstruktioalalla erityistietojen ja -taitojen tulisi käsittää:
- törmäysmekaniikka
- aika-matkalaskentaa
- perustietoja kolarityhteensopivudesta
- biomekaniikan ja vammautumismekaniikan teknistä puolta
- perustietoja inhimillisistä tekijöistä
- ajoneuvotekniikkaa, erityisesti koskien ohjaus- ja jarrujärjestelmiä sekä ajoneuvodynamikkaa
- perustietoja simulointitekniikoista
- perustietoja korjaustekniikoista ja korjauskustannuslaskennasta
- vakuutuspetoksen teknistä toteamista
- digitaalista kuvaamista ja kuvankäsittelyä (kuvan korjaamista/manipulointia)
- tien infrastruktuuria
- perustaitoja rikostutkinnasta ja todisteiden tulkinnasta
- kuten myös onnettomuuspaikan tutkimisessa vaadittavia tietoja ja taitoja

7. Palkkio

Kun rekonstruoijan on kutsuttu tai tilattu oikeuden toimesta, tulee palkkion olla riittävä, esimerkiksi verrannollinen vapailla markkinoilla saatavana.

8. Rekonstruoija vs. korjauskustannusasiantuntija

Monissa Euroopan maissa korjauskustannuslaskijan ammattia ei ole selkeästi eroteltu onnettomuuden rekonstruoinnista. Tilanteen mahdollistavat ammatilliset nimikkeet kuten esimerkiksi ajoneuvotekninen (Teknillinen) asiantuntija.

Kun korjauskustannuslaskennassa tarvitaan lausunto ”lopullista tilasta” (vaurioitunut ajoneuvo sellaisena kuin se on), onnettomuuden rekonstruoinnissa tulee yleensä määrätä dynaamista prosessia (esimerkiksi ajoneuvon lähestymistä törmäyspisteenä). Erotuksena kaikkiin eri alojen lisätietoihin ja -taitoihin, joita onnettomuuden rekonstruointi vaatii, juuri dynaaminen näkökulma erottaa sen muista ajoneuvoteknisen asiantunte- muksen alueista.

Korjauskustannuslaskijan ei tarvitse tietää mitään onnettomuuden rekonstruoinnista. Eikä onnettomuuden rekonstruoija tarvitse ollenkaan korjauskustannuslaskennan taitoja varsinaiseen onnettomuuden rekonstruointiin. Kuitenkin voi olla hyödyllistä, jos rekonstruoijalla on perustiedot korjauskustannuslaskennasta, koska ajoittain tarvitaan mielipide korjauskulmasta.
Propositions de lignes de conduite européennes en reconstitution d’accident

Le texte suivant est le compte rendu corrigé et édité des accords obtenus lors du deuxième séminaire QUERY s’étant tenu à Bratislava en Slovaquie, en date du 20 octobre 2005.

1. Examen des lieux du sinistre et reconstitution d’accident

Concernant les accidents de véhicules terrestres, une distinction doit être faite entre deux types de travaux :

- Recherche des traces et indices sur les lieux, y compris des mesurages (p.ex. : décelération), mesures conservatoires et auditions.
- Reconstitution d’accident, c’est-à-dire l’utilisation de moyens scientifiques dont le but est d’établir des conclusions à partir des indices rassemblés lors des investigations sur le site d’un accident.

Dans la plupart des pays européens, le premier type de travail est mené par les forces de l’ordre, de préférence spécifiquement formées. Nous suggérons de nommer ces personnes : « enquêteurs d’accident ».

Le deuxième type de travail devrait être exécuté par des personnes ayant une qualification académique. Nous suggérons de nommer ce type de travail la reconstitution d’accident et de distinguer clairement ce métier de celui formant le premier groupe.

Dans les pages suivantes, nous utiliserons le terme de « accidentologue » ou un terme comparable du langage local, pour décrire les personnes effectuant un tel travail. Les termes d’expert technique, d’expert en automobile ou toute autre appellation contenant le mot expert devraient être évités car ils impliquent des ambiguïtés.

Les Pays-Bas et le Royaume-Uni ne sont pas d’accord avec la notion de qualification académique. Dans ces pays où la collecte des données sur les lieux de l’accident et l’analyse qui en découle sont effectuées par les forces de l’ordre, une formation supplémentaire adéquate devrait être donnée.

Quand l’analyse est particulièrement complexe ou qu’elle requiert l’utilisation de lois physiques ou mathématiques complexes qui vont au-delà des connaissances de l’officier en charge du dossier, les conclusions doivent être validées par une personne appropriée qui détient le savoir et l’expérience nécessaire. Cette personne peut être un membre des forces de l’ordre ou autre. Dans de tels cas, une distinction doit être faite entre ceux possédant un diplôme académique et ceux possédant une expérience pratique.

2. Titre protégé pour Accidentologues

Dans la plupart des pays européens, il est usuel qu’un seul expert soit mandaté au cours d’un procès, alors que dans certains pays, deux experts sont requis, représentant chacun une des parties en cause.

L’utilisation d’un seul expert au cours d’un procès exige de sérieuses contraintes quant à ses qualifications et son intégrité morale. En effet, l’issue du procès est basée sur les conclusions de l’accidentologue dont le raisonnement et les apports techniques sont difficilement vérifiables par une personne non qualifiée.

Pour garantir la qualification et l’intégrité morale des accidentologues, l’établissement d’un système de contrôle qualité paraît essentiel. Les personnes certifiées au travers de ce système devraient disposer d’un titre protégé (de préférence par un tampon ou un sceau) qui permettra de les distinguer des experts autoproclamés.

Ce système serait comparable à celui de la gestion des titres dans d’autres professions, comme les docteurs en médecine ou les avocats.

3. Examen des lieux de l’accident

Rassembler les traces sur les lieux d’un accident grave est une tâche lourde de responsabilités.

A ce titre, elle doit être effectuée par des personnes spécialement formées, ce qui n’est généralement pas le cas des forces de l’ordre.

En général, un enquêteur d’accident n’a pas besoin d’être hautement diplômé. En effet, la collecte des traces et indices peut, après une formation adéquate, être basée sur l’utilisation de cannevas spécialisés fixant les lignes de conduite et les nécessités.

Toutefois dans le cas d’un accident complexe, une reconstitution (partielle) de l’accident, réalisée directement sur les lieux, peut aider à rassembler les traces et indices, et donc nécessiter la présence de l’accidentologue.

4. Qualification de l’Accidentologue

La reconstitution d’un accident (comme défini ci-dessus) fait appel à des connaissances spécifiques des principes physiques et techniques qui ne sont généralement acquises que par des études techniques. Un diplôme d’ingénieur en mécanique, ou un diplôme universitaire en physique (ou matière comparable) est un pré-requis pour devenir accidentologue.

Cependant la seule détention d’un diplôme universitaire est insuffisante pour mener à bien ce type de travail. Un savoir pratique et théorique du métier est aussi nécessaire.

En ce qui concerne la qualification théorique, des études « postgraduate » constituent une approche possible et demeurent préférables à une formation « sur le tas ». Néanmoins, le savoir pratique ne peut être acquis que sur le terrain et ce, pendant au moins trois années. De plus, les accidentologues doivent posséder un niveau de connaissance pratique minimum du système judiciaire du pays où ils exercent, incluant les codes de procédure et les règles de preuve.

Les accidentologues doivent posséder au moins un permis de conduire, catégorie B.

Les permis de classe A et C1-CE sont recommandés. Le fait de posséder un permis dans une certaine classe ne garantit en général pas une expérience de conduite suffisante dans cette classe. L’expérience de conduite est nécessaire pour juger des comportements d’un conducteur ou d’un véhicule.

5. Processus de certification

Les candidats qui souhaitent être certifiés comme accidentologues devront passer un examen afin de prouver leur savoir dans le domaine de la reconstitution d’accident.
Ces examens devront être menés par un nombre limité d’institutions accréditées. Il est essentiel que la formation et la certification ne soient pas dispensées par la même institution si le résultat de l’examen est en conflit avec des intérêts financiers.

La certification des accidentologues devra être limitée dans le temps et devra être renouvelée approximativement tous les 5 ans.

Dans des cas de manquement graves, l’institution délivrant la certification pourra être en mesure de la retirer. Dans ce cas, l’accidentologue devra suivre une nouvelle formation et repasser un examen pour garder sa certification.

6. Savoir technique dans le domaine de la reconstitution d’accident

Le savoir spécifique dans le domaine de la reconstitution d’accident comprend:

- Mécanique des chocs;
- Calculs cinématiques (temps, espace,…);
- Savoir de base sur les collisions;
- Aspects techniques de biomécanique et des mécanismes de blessures;
- Connaissances de base sur les facteurs humains;
- Technologie des véhicules et leur dynamique, y compris les dispositifs de direction et de freinage;
- Savoir de base sur les techniques de simulation;
- Savoir de base sur les techniques de réparation et sur le calcul de leur coût;
- Preuves techniques de fraude à l’assurance;
- Photographie digitale et technique de correction des images;
- Infrastructure routière;
- Connaissances de base sur la criminologie et l’interprétation des indices;
- Tout le savoir requis pour examiner les lieux d’un accident.

7. Rémunération

La rémunération des accidentologues en cas de désignation par la magistrature devrait être adéquate, comparable à celle obtenue sur le marché libre.

8. Accidentologues et Experts automobiles

Dans beaucoup des pays européens, la profession qui consiste à estimer les coûts de réparation n’est pas clairement différenciée de celle de l’accidentologue. Cette situation est facilitée par des titres génériques tels que « expert automobile ».

Alors que dans l’estimation des coûts de réparation, seul l’état final du véhicule (véhicule endommagé après accident) est pris en compte pour l’accomplissement du travail, en accidentologie, il est usuellement nécessaire de déterminer des processus dynamiques (par exemple l’approche des véhicules au point de collision).

Mis à part les connaissances supplémentaires requises dans les domaines variés que la pratique de l’accidentologie nécessite, l’approche dynamique est celle qui la distingue des autres domaines de l’expertise automobile.

Donc, un expert en évaluation de dommages n’a pas besoin de disposer de connaissances spécifiques en accidentologie. En revanche, même si un accidentologue n’a pas besoin de connaissances particulières en estimation de coût de réparation lorsqu’il procède à la reconstitution d’un accident, il peut cependant s’avérer utile que l’accidentologue possède quelques connaissances de base en estimation de coûts afin d’être en mesure de répondre à une question de ce type en cas de besoin.
German
Empfehlungen für Europäische Richtlinien in der Unfallrekonstruktion:


1. Spurensicherung an der Unfallstelle vs. Unfallrekonstruktion

Bei Straßenverkehrsunfällen sollte zwischen zwei Arbeitsfeldern unterschieden werden:

- Spurensicherung an der Unfallstelle, einschliesslich Vermessungen (z. B. Bremsgeschwindigkeit), Sicherung von flüchtigen Spuren, sowie Befragung von Beteiligten und eventuellen Zeugen
- Unfallrekonstruktion, d. h. die Verwendung wissenschaftlicher Methoden, um Schlüsse aus den an der Unfallstelle dokumentierten Spuren zu ziehen

In den meisten europäischen Ländern wird die Spurensicherung von der Polizei ausgeführt, vorzugsweise von Beamten, die über eine spezielle Ausbildung verfügen. Wir schlagen vor, solche speziell ausgebildeten Personen in Zukunft als Unfallermittler (‘accident investigator’) zu bezeichnen.

Tätigkeiten im zweiten Arbeitsfeld, der Unfallrekonstruktion, sollten von akademisch gebildeten Personen ausgeführt werden.

Wir schlagen vor, dieses Arbeitsgebiet mit dem Begriff Unfallrekonstruktion (‘accident reconstruction’) bzw. Unfallanalyse zu bezeichnen, und die sich daraus ergebende Tätigkeit klar von der der Berufsgruppe der Unfallermittler zu unterscheiden.

Im Folgenden wird der Begriff Unfallrekonstrukteur benutzt, um Personen, die diese Tätigkeit ausführen, zu beschreiben. Für den im Englischen verwendeten Begriff reconstructor verwenden wir vergleichbare Begriffe in der jeweiligen Landessprache, wobei im Deutschen auch der Begriff Unfallanalytiker gleichbedeutend ist.


Die Niederlande und Großbritannien stimmen der Mindestanforderung einer akademischen Bildung nicht zu.

In diesen Ländern, in denen ein System der Spurensicherung und -analyse seitens der Polizei existiert, sollte eine ausreichende Aus- und Weiterbildung sichergestellt werden.

Im Falle einer besonders komplexen Ermittlung, oder einer, die die Anwendung von physikalischen Gesetzen und Mathematiken erfordert, welche für eine Beweisführung vor Gericht notwendig sind, aber außerhalb des Erfahrungsbereiches des Ermittlers liegen, müssen die Beweise und Schlussfolgerungen von einem geeigneten Experten, der das notwendige Wissen und die notwendige Erfahrung besitzt, validiert werden. In solchen Fällen muss zwischen akademischer Bildung und praktischer Erfahrung abgewogen werden.

2. Geschützter Titel für Unfallrekonstruktions

In den meisten europäischen Ländern wird im Allgemeinen nur ein vom Gericht beauftragter Sachverständiger eingesetzt, während in einigen wenigen Ländern in der Regel zwei Experten - einer für jede der beiden streitenden Parteien - eingesetzt werden. Besonders dann, wenn nur ein Gerichtssachverständiger am Verfahren beteiligt ist, werden hohe Anforderungen an die Qualifikation und die moralische Integrität gestellt: Die Urteilsfindung basiert auf den vom Unfallrekonstrukteur gezogenen Schlüssen, und diese können von einem Laien nicht im Detail geprüft werden.

Um Qualifikation und moralische Integrität zu garantieren, muss ein System der Qualitätskontrolle aufgebaut werden. Personen, die durch solch ein Qualitätskontrollsystem geprüft sind, sollten einen geschützten Titel erhalten (und, wenn möglich, noch andere geschützte Insignien), damit Laien die Möglichkeit haben, diese Personen von selbsternannten Experten zu unterscheiden.

Dieses System wäre vergleichbar mit den üblichen Gepflogenheiten von geschützten Titeln in anderen Berufen, wie der des Arztes und des Rechtsanwalts.

3. Unfallermittlung

Die Spurensicherung an der Unfallstelle ist eine Aufgabe, die hohe Verantwortung mit sich bringt, und daher speziell ausgebildetes Personal erfordert. Generell kann diese Aufgabe nicht von Personen, die nur über eine allgemeine polizeiliche Ausbildung verfügen, getätigt werden.

Im Allgemeinen braucht solch ein Unfallermittler (‘accident investigator’) keine akademische Qualifizierung, da die Spurensicherung weitgehend unter Verwendung standardisierter Richtlinien und Grundregeln erfolgen kann, ohne dass der gesamte Unfall bereits bei der Spurensicherung rekonstruiert wird.

Bei einem sehr komplexen Unfall kann aber eine Teilrekonstruktion an der Unfallstelle dabei helfen, die Spurensicherung durchzuführen. In diesen Fällen wäre es sinnvoll, einen Unfallrekonstrukteur zur Unfallstelle zu rufen.

4. Qualifikationen des Unfallrekonstruktors


5. Zertifizierung

Kandidaten, die eine Zertifizierung als Unfallrekonstrukteur beantragen, sollten eine Prüfung ablegen, in der sie ihr Spezialwissen auf dem Gebiet der Unfallrekonstruktion unter Beweis stellen müssen.


6. Spezialkenntnisse in der Unfallrekonstruktion

Die Spezialkenntnisse auf dem Gebiet der Unfallrekonstruktion sollten folgende Punkte beinhalten:

- Kollisionsmechanik
- Weg-Zeit-Betrachtungen
- Grundkenntnisse zur Biomechanik und Energieaufnahme von Fahrzeugen
- Grundkenntnisse zur Mechanik und Biomechanik in Bezug auf Verletzungen
- Grundkenntnisse zur Fahrerpsychologie
- Fahrzeugtechnik, besonders in Bezug auf technische Bauteile der Lenk- und Bremssysteme, sowie der Fahrzeugstabilität
- Grundkenntnisse der Simulationstechnik
- Grundkenntnisse zu Techniken der Unfallreparatur und der Kostenkalkulation nach Unfällen
- technische Aufklärung von Versicherungsbetrag mit Kraftfahrzeugen
- digitale Fotografie und Bildbearbeitungsmethoden
- Infrastruktur von Verkehrsweisen
- Grundkenntnisse zur Kriminalistik und der Auswertung von Beweismitteln
- sowie alle Kenntnisse, die zur Spurensicherung an der Unfallstelle benötigt werden.

7. Arbeitsvergütung

Die Vergütung eines Unfallrekonstruktors bei gerichtlicher Beauftragung sollte angemessen sein, d.h. mit der Vergütung einer Beauftragung durch den freien Markt vergleichbar sein.

8. Rekonstruktion vs. Reparaturkostenkalkulation


Folglich benötigt ein Sachverständiger für Schäden und Bewertung zur Berufsausübung keine Kenntnisse zur Unfallrekonstruktion. Während der Unfallrekonstrukteur für die eigentliche Rekonstruktion keine Kenntnisse der Reparaturkostenkalkulation benötigt, kann es dennoch hilfreich sein, wenn er zumindest grundlegende Kenntnisse der Reparaturtechnologie und der Kostenkalkulation hat. Denn in manchen Fällen vor Gericht muss der Unfallrekonstrukteur die Schadenbewertung eines Fahrzeugs und die veranschlagten Reparaturkosten beurteilen können.
ΠΡΟΤΑΣΗ ΓΙΑ ΕΥΡΩΠΑΙΚΕΣ ΚΑΤΕΥΘΥΝΣΕΙΣ ΓΡΑΜΜΕΣ ΣΤΗΝ ΑΝΑΠΑΡΑΣΤΑΣΗ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Το ακόλουθο κείμενο είναι η διορθωμένη και εκδομένη απόδοση των συμφωνιών που πάρθηκαν κατά το 2ο QUERY WORKSHOP, το οποίο έγινε στην Μπρατισλάβα στις 20 Οκτω-βρίου 2005.

1. ΕΞΕΤΑΣΗ ΤΗΣ ΣΧΗΜΑΣ ΤΟΥ ΔΥΣΤΥΧΗΜΑΤΟΣ VS ΑΝΑΠΑΡΑΣΤΑΣΗ ΔΥΣΤΥΧΗΜΑΤΩΝ

Οσον αφορά τροχαία δυστυχήματα, πρέπει να γίνει μια διά-κριση μεταξύ δύο τύπων εργασιών:
• Συλλογή μαρτυριών και στοιχείων στην σκηνή ενός δυστυ-χήματος αναπαράστασης συμπεριλαμβανομένων μετρήσεων (δηλ. παρατήρηση τριβής), διατήρηση προσωπικών στοιχείων και συνεντεύξεις από μέρη.
• Αναπαράσταση οδικών δυστυχημάτων, δηλ. εφαρμογή επιστημονικών μεθόδων με σκοπό την εξαγωγή συμπερα-σαμάτων από τα στοιχεία που έχουν συλληφθεί στην σκηνή του δυστυχήματος.

Στις περισσότερες Ευρωπαϊκές χώρες ο πρώτος τύπος εργασίας εκτελείται από αστυνομικούς, κατά προτίμηση με ειδική εκπαίδευση. Εισηγούμαστε να αποκαλούμε τέτοιο ειδικά εκπαιδευμένο άτομο εξεταστή σκηνής δυστυχήματος.

Ο δεύτερος τύπος εργασίας πρέπει να εκτελείται από άτομα με ακαδημαϊκά προσόντα. Εισηγούμαστε να αποκαλούμε αυτό το είδος εργασίας αναπαράσταση οδικών δυστυχημάτων, και να το διαχωρίσουμε καθαρά ανάλογα από τον τομέα για τα ανθρώπινα πρόσωπα και την ανακατασκευή της σκηνής.

Στη συνέχεια θα χρησιμοποιούμε τον όρο «ειδικός στις ανα-παραστάσεις» (reconstructionist) ή παρόμοιους όρους για να περιγράψουμε άτομα που εκτελούν τέτοιου είδους εργασία. Η χρήση όρων όπως «τεχνικός εμπειρογνώμονα» ή «εμπειρογνώ-μονας οχημάτων» πρέπει να αποφεύγεται καθότι υποδηλούν αμφιβολίες.

Η Ολλανδία και το Ηνωμένο Βασίλειο δεν συμφωνούν με την ανάγκη ακαδημαϊκών προσόντων.

Σ’αυτές τις χώρες, όπου υπάρχει ένα σύστημα συλλογής στοιχείων από την σκηνή και ανάλυσής των από τις αστυνομικές αρχές πρέπει να παρέχεται κατάλληλη εκπαίδευση και επιμόρφωση.

Εάν και εφόσον μία εξέταση είναι ιδιαίτερα πολύπλοκη ή συνεργαζόμενη, οι μεταπτυχιακές σπουδές θα πρέπει να παρέχονται μόνο κατά ειδικότητα. Αυτό πρέπει να εξετάζεται καθ’ ολόκληρη την αναπαράσταση δυστυχήματος.
5. ΔΙΑΔΙΚΑΣΙΑ ΠΙΣΤΟΠΟΙΗΣΗΣ

Υποψήφιοι οι οποίοι επιθυμούν να αποκτήσουν πιστοποίηση σαν ειδικοί αναπαράστασης θα πρέπει να έχουν περάσει μια εξέταση για να αποδείξουν την εξειδικευμένη γνώση τους στον τομέα της αναπαράστασης δυστυχημάτων.

Τέτοιες εξετάσεις θα πρέπει να γίνονται από ένα περιορισμένο αριθμό αναγνωρισμένων ιδρυμάτων.

6. ΤΕΧΝΙΚΕΣ ΓΝΩΣΕΙΣ ΣΤΟΝ ΤΟΜΕΑ ΤΗΣ ΑΝΑΠΑΡΑΣΤΑΣΗΣ ΟΔΙΚΩΝ ΔΥΣΤΥΧΗΜΑΤΩΝ

Εξειδικευμένη γνώση στον τομέα της αναπαράστασης οδικών δυστυχημάτων θα πρέπει να συμπεριλαμβάνει:

- Μηχανισμό των συγκρούσεων
- Υπολογισμοί χρόνου-απόστασης
- Βασική γνώση στην αντοχή σε συγκρούσεις
- Τεχνική πλευρά των βιομηχανισμών και μηχανισμών των τραυματισμών
- Βασική γνώση του ανθρώπινου παράγοντα
- Τεχνική απόδειξη ασφαλιστικής απάτης
- Ψηφιακή φωτογραφία και τεχνική ψηφιακής απεικόνισης (διόρθωμα/παραποίηση εικόνων)
- Οδική υποδομή
- Βασική εγκληματικότητας και ερμηνεία μαρτυριών
- Όπως επίσης και όλη την γνώση η οποία χρειάζεται για να γίνεται εξέταση σκηνής ενός δυστυχήματος.

7. ΑΜΟΙΒΗ

Η αμοιβή του ειδικού στις αναπαραστάσεις όταν προσλαμβάνεται από το δικαστήριο πρέπει να είναι ικανοποιητική δηλ. συγκρίσιμη με αυτή που εξασφαλίζεται στην ελεύθερη αγορά.

8. ΕΙΔΙΚΟΣ ΣΤΙΣ ΑΝΑΠΑΡΑΣΤΑΣΕΙΣ Vs ΕΙΔΙΚΟΣ ΣΤΙΣ ΕΚΤΙΜΗΣΕΙΣ ΚΟΣΤΟΥΣ ΕΠΙΔΙΟΡΘΩΣΗΣ ΟΧΗΜΑΤΩΝ

Σε πολλές ευρωπαϊκές χώρες, το επάγγελμα του εκτιμητή ζημιών οχημάτων δεν είναι καθαρά διαφοροποιημένο από το επάγγελμα του ειδικού στις αναπαραστάσεις δυστυχημάτων. Αυτή η κατάσταση διευκολύνεται από επαγγελματικούς τίτλους όπως «ειδικός οχημάτων».

Ενώ στις εκτιμήσεις ζημιών, χρειάζεται μια απόφαση στο τελικό στάδιο (το κτυπημένο όχημα ως έχει) στην αναπαράσταση οδικών δυστυχημάτων είναι συνήθως απαραίτητο να καθοριστούν δυναμικές σταδιακές αλλαγές (για παράδειγμα την προσέγγιση των οχημάτων προς το σημείο σύγκρουσης).

Εκτός από όλη την επιπρόσθετη γνώση σε διάφορους τομείς τους οποίους η απόκτηση της αναπαράστασης δυστυχημάτων χρειάζεται, αυτή η δυναμική προσέγγιση είναι αυτό που την διαχωρίζει από άλλους τομείς πραγματογνωμοσύνης οχημάτων.

Γι’αυτό τον λόγο, ένας ειδικός στις εκτιμήσεις ζημιών δεν χρειάζεται να κατέχει κάποια γνώση αναπαράστασης δυστυχημάτων. Ενώ ένας ειδικός στις αναπαραστάσεις δεν χρειάζεται καμιά γνώση στις εκτιμήσεις ζημιών οχημάτων, για την ακριβή αναπαράσταση ενός δυστυχήματος μπορεί να είναι χρήσιμο να είχε μία βασική γνώση εκτίμησης ζημιών, διότι μπορεί σε κάποια στιγμή να παρουσιαστεί η ανάγκη να εκφραστεί γνώμη σε μία ειδική εκτίμηση.
Hungarian

Európai előírási javaslatok a balesetrekonstrukció területén.

A második QUERY Workshop
2005.10.20.Bratislava
átolgozott szövege.

1. Nyombiztosítás a baleset helyszínén, illetve balesetrekonstrukció.

A közlekedési baleseteknél két munkaterületet lehet megkülönböztetni:
- Nyombiztosítás és felmérés (pl: fékezés, kezdeti sebesség) a baleset helyszínén az elmozduló (elváltozó) nyomok rögzítése, illetve a részrevezetők és a tanárok megmérését.
- Balesetrekonstrukció alatt a tudományos módszerek alkalmazásával – a helyszínen rögzített nyomok alapján – történő következtetések meghozatalát értjük.

A legtöbb európai országban a nyombiztosítást a rendőrség erre kiképzett szakemberei végezik. Javasoljuk az ilyen speciális kiképzett személyeket a jövőben balesetvizsgálóknak nevezni.

A második munkatartományban a balesetrekonstrukcióban felsőfokú képzettséggel rendelkező személyeket kellene alkalmas.

Javasoljuk, hogy ezt a szakterületet balesetrekonstrukciónak (accident reconstruction), illetve baleset elemezésének elnevezés előnye és az abbból származó tevékenységet világosan elválasztani a baleset vizsgálóknak.

A következőkben a balesetrekonstruktőr megnevezést alkalmazzuk azóra, akik előbbi tevékenységét végezik. Az angol nyelvből használt megnyilvánulást „reconstructionist” használjuk az egyes nemzeti fordításokban, balesetjezö, amelynek németszerű megfelelője az analitika azonos tevékenységet takar.

A „műszaki szakértő” vagy „gépjármű szakértő” fogalmat a jövőben kerülni kell, mivel ezek többjelentőségek.

Hollandiában és Nagy-Britanniában nem szükséges felsőfokú képzettség. Ezekben az országokban, amelyekben a nyombiztosítás és elemzés rendszere a rendőrség hatáskörében van, szélesebb körüli alap és továbbképzést kellene bevezetni.

A különösen összetett jelzésrek során, vagy azokban, ahol fizikai törvények és matematikai ismeretek van szükség, amely a bírósági bizonyítási eljárásokban előnyös, azonban meghaladja a vizsgáló ismeretközéret, a bizonyítékokat és később a közvetítést kellene valósítania, aki elegendő ismeretintézettel és szükséges tapasztalattal rendelkezik.

Ezekben az esetekben az elméleti, felsőfokú képzség és a gyakorlati tapasztalat együttesen szükséges.

2. A balesetrekonstruktőr védete védése elnevezése.

A legtöbb európai országban, általánosságban a bíróság csak egy szakértőt bíz meg, miközben ennél kevesebben országban általában kettő szakértőt alkalmaznak egyet-egyet a peres felek oldalán. Különösen akkor, ha csak egy bírósági szakértő szerepel az eljárásban, akkor a magas kvalifikációs követelmények és morális integritás vetődik fel. A bírósági ítélet a balesetrekonstrukciónál által megállapított következtetésekre, megállapításokon alapulnak és ezeket a laikusok részleteiben, nem tudják ellenőrizni.

A baleset helyszínén végzett nyombiztosítás és rögzítés magas felelősségi szintű feladat és ezért speciálisan kiképzett személyzet igényel. Általánosan azt lehet mondani, hogy az általános rendőrségi képességgel rendelkező személyek ezt a feladatot nem tudják megfelelően ellátani. Általában a baleset vizsgáló nem igényel felsőfokú képzettséget, mivel a nyombiztosítást többnyire szabványosított előírások és szabályozások alapján végeznek, a teljes baleseti rekonstrukció azonban előbbi felhasználásával készül.

Természetesen nagyon összetett balesetek esetében már a baleset helyszínén bizonyos rész – rekonstrukció szükséges annak érdekében, hogy a nyombiztosítást és rögzítést el lehessen végezni. Ilyen esetekben szükséges lehet a balesetrekonstruktőr helyszíni részvételére is.


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4. A balesetrekonstruktőr minősítése.

A balesetek rekonstrukciója a korábbiakban megnevezett követelmények szerinti szinten többnyire széleskörű fizikai és műszaki ismeretekre igényel, amelyet csak műszaki tanulmányok alapján lehet elérni. A balesetrekonstrukció területén a rendőrség különféle feladatokat és szerepeket kell rendelkeznie. Természetesen azonban ez a képzettség különféles szervekben és megfelelő helyzetben és igény szerinti, mivel az általános rendőrség feltételeinek mellett a balesetrekonstruktőrnek speciális képzettségei, szaktudásai és szakképességei szükségesek.

A balesetrekonstrukciók minősítése azonban fontos feladat. A balesetrekonstrukció területén az általános jogosítványokkal rendelkező személyek a balesetrekonstrukciónak való részvételére nem vagy csak korlátozottan felkészülni. Ezért az új védekezési rendszer megvalósításához és az új megjegyzések tervezéséhez speciális ismeretek és tapasztalatok szükségesek.

5. Certifikálás - minősítés.

Azon jelöltek, akik balesetrekonstruktőri certifikátumot kívánnak elvégezni vizsgát kell tenniük a balesetrekonstrukció és bizonyítás specialis ismeretéről.

Az ilyen vizsgáztatásokat egy korlátozott számban akkreditált intézményekben lehetne elvégezni. Ennek során különösen fontos lenne, hogy a képzség és a vizsgáztatást ne ugyanazon intézményen végezzenek.
A baleseterekonstruktor certifikálásának érvényességi időtartama korlátozott lenne. Körülbelül öt év után meg kellene erősíteni. Szélsőséges esetekben a certifikáció intézmények visszavonhatnák a minősítést. Ezekben az esetekben a baleseterekonstruktor visszafogadhatna a minősítést. Ezekben az esetekben a baleseterekonstruktor további képzéseken kellene részt vennie a certifikálása megtartása érdekében.

6. A baleseterekonstrukció speciális ismeretei:
A baleseterekonstrukció területén a következő speciális ismeretek szükségesek:
- Ütközés mechanika,
- Út – idő számítások,
- Biomechanikai alapismeretek és a járművek energia felvétel,
- A sérülésekre vonatkozó mechanikai és biomechanikai alapismeretek,
- Gépjárműtechnika, különös tekintettel a fék – kormányrend szer elemeire és a gépjármű stabilitására vonatkozóan,
- A simulációs technika alapismerete,
- A baleseti javítási és költség kalkuláció alapismerete,
- A gépjármű biztosítási csalások műszaki felderítése,
- Digitális fényképezés és képfeldolgozás,
- A közlekedési utak infrastruktúrája,
- Kriminalisztikai, illetve bizonyítási folyamat alapismeretek,
- A baleseti helyszíni nyomrögzítés összes ismerete.

7. A munka díjazása.
A bírósági felkérésekre elkészített baleseterekonstruktőri tevékenység díjazása feleljen meg a szabad piacon elérhető megbízás díjazásának.

8. Rekonstrukció és javítási kalkuláció.
Számos európai országban a közlekedési balesetekben sérült járművek javítási kalkulációját végző és baleseterekonstruktori hivatás nincs egyértelműen szétválasztva. A jelenlegi helyzetben az egységes „gépjármű szakértő” elnevezést használják. Miközben a javítási kalkuláció egy tartósan változatlan állapotból (sérült gépjármű) indul ki, ezekben a baleseterekonstrukció dinamikus folyamatokat (pl: két jármű közlekedése az ütközési ponthoz) elemez.

Eltekintve a baleseterekonstrukció elvégzéséhez szükséges kiegészítő ismeretektől, a dinamikus vagy rendszertechnikai gondolkodásmódot igénylő móda a meghatározó jellemzője ennek a munkaterületnek, amely a gépjármű ismeretek más szakterületétől markánsan megkülönbözteti.

A gépjármű károkkal és értékeléssel foglalkozó szakértő nem igényel baleseterekonstrukciót a vonatkozó ismereteket. A baleseterekonstruktor számára a tényleges rekonstrukció során javítási kalkulációs ismeretek nem szükségesek, azonban segítik, amennyiben a javítási technológiára és költség kalkulációra vonatkozóan alapismeretekkel rendelkezne. Ennek révén bizonyos esetekben a bíróság részére a baleseterekonstruktor is el tudna végezni a kár értékelést és meg tudna ítélni a javasolt javítási költségeket.
Italian

Proposta di Linee Guida Europee nella Ricostruzione di Incidenti Stradali

Il testo seguente è la versione rivista e corretta dell’accordo raggiunto nel corso del 2° QUERY Workshop, tenutosi in Bratislava il 20 ottobre 2005.

1. Esame della Scena del Sinistro vs. Ricostruzione del Sinistro

Nel caso di incidenti tra veicoli, dovrebbe essere fatta una distinzione tra due diversi tipi di attività:

- raccolta di prove e dati sulla scena (o campo) di un sinistro, comprese misurazioni (per esempio decelerazioni), preservazione di prove non durature ("effimere") ed interviste;
- ricostruzione del sinistro stradale, i.e. l’uso di metodi scientifici aventi lo scopo di trarre conclusioni dalle prove raccolte sul campo di un sinistro.

Nella maggior parte dei Paesi Europei, il primo tipo di attività è eseguito da agenti di polizia, preferibilmente con addestramento specialistico. Noi suggeriamo di chiamare queste persone specialisticamente addestrate esaminatori della scena dell’incidente.

Il secondo tipo di attività dovrebbe essere eseguito da persone con una qualifica accademica. Noi suggeriamo di chiamare questo tipo di attività ricostruzione di incidenti stradali, e di distinguere chiaramente tale professione da quella del primo gruppo nominato.

Nel seguito, useremo il termine ricostruttore o termini simili nelle lingue locali per descrivere le persone che eseguono tale lavoro. L’uso di termini quali ‘esperto tecnico’ o ‘esperto di veicoli’ dovrebbe essere evitato perché implicano ambiguità.

Olanda e Regno Unito non concordano con il requisito della qualifica accademica.

In questi paesi, dove è in vigore un sistema che prevede la raccolta dati sulla scena del sinistro e l’analisi da parte delle autorità di polizia, dovrebbero essere forniti addestramento ed istruzione appropriati.

Se e quando un’indagine è particolarmente complessa, o implica l’applicazione di leggi fisiche o di matematica complessa che vanno oltre l’esperienza degli agenti investigatori, le prove devono essere validate da un esperto appropriato (un agente di polizia o altro) che abbia la necessaria conoscenza ed esperienza. In tali casi, va raggiunto un equilibrio tra chi possiede qualifiche accademiche e chi possiede un’essenziale esperienza pratica.

2. Protezione del Titolo per i Ricostruttori di Incidenti Stradali

Nella maggior parte dei paesi europei, è maggiormente diffuso l’utilizzo di un solo (‘condiviso’) esperto tecnico in un processo, mentre in alcuni paesi ci sono normalmente due esperti, uno per ciascuna parte in causa. L’uso di un solo esperto in un processo esige una rigorosa verifica delle sue qualifiche e didel sua integrità morale: la causa è decisa sulla base delle conclusioni tratte dal ricostruttore che una persona non esperta non può verificare nel dettaglio.

Per garantire la qualifica e l’integrità morale, è necessario stabilire un sistema di controllo della qualità. Alle persone che sono certificate da questo sistema di controllo della qualità dovrebbe essere assegnato un titolo riservato (a preferibilmente un timbro o un sigillo), che dovrebbe consentire ai non esperti di distinguere dagli esperti autoproclamati.

Questo sistema dovrebbe essere confrontabile con la gestione dei titoli in altre professioni, come medici e avvocati.

3. Ispezione della Scena dell’Incidente Stradale

Raccogliere prove sulla scena di un incidente stradale grave è un compito che comporta molta responsabilità, e pertanto richiede personalle appositamente addestrato. Normalmente non può essere eseguito da comuni agenti di polizia.

In generale, un tale esaminatore della scena dell’incidente non necessita di una qualifica accademica, poiché la raccolta di prove può fare affidamento, dopo un adeguato addestramento, principalmente su un vasto elenco già esistente di orientamenti e indicazioni.

Nel caso di un incidente complesso, una (parziale) ricostruzione del sinistro sul campo può, tuttavia, aiutare nella raccolta delle prove, e pertanto richiede la presenza di un ricostruttore.

4. Qualifiche del Ricostruttore di Incidenti Stradali

La ricostruzione di un incidente (come sopra definito) richiede frequentemente una profonda conoscenza dei principi fisici e tecnici, che generalmente possono essere acquisiti solo per mezzo di studi tecnici. Una laurea in ingegneria meccanica, fisica o materie comparabili è pertanto un requisito per diventare un ricostruttore.

Tuttavia, una laurea universitaria da sola non è sufficiente per svolgere questo tipo di lavoro. È richiesta una conoscenza pratica e teorica speciale nel campo.

Riguardo alla qualifica teorica, le specializzazioni post-laurea sono una possibile soluzione, e sarebbero preferibili al solo praticantato. D’altra parte, la conoscenza pratica può essere acquisita solamente con un lavoro pratico sul campo, per il quale sono necessari non meno di 3 anni. Inoltre i ricostruttori dovrebbero avere almeno una conoscenza di base del sistema giudiziario del paese nel quale esercitano, incluse le norme di procedura ed i criteri di acquisizione e valutazione delle prove.

I ricostruttori devono possedere almeno la patente di guida di categoria B. Il possesso di patenti di categoria A e C1-CE è raccomandato. Il solo possesso di una patente in una particolare categoria non garantisce generalmente sufficiente esperienza di guida in tali categorie. L’esperienza di guida è necessaria, tuttavia, per giudicare il comportamento di un particolare veicolo e del suo conducente.

5. Processo di Certificazione

I candidati che desiderano ottenere la certificazione come ricostruttori dovrebbero superare un esame per provare le loro conoscenze specialistiche nel settore della ricostruzione di incidenti stradali.

Tali esami dovrebbero essere effettuati da un numero limitato di istituzioni accreditate. Sarebbe essenziale che l’addestramento e gli esami non fossero effettuati dalla stessa istituzione se l’esito dell’esame contrasta con interessi finanziari.
La certificazione di un ricostruttore dovrebbe essere limitata nel tempo, e dovrebbe essere rinnovata approssimativamente una volta ogni cinque anni. In casi estremi, l’istituzione che rilascia la certificazione dovrebbe essere autorizzata a revocarla o sospenderla. In tali situazioni, il ricostruttore certificato dovrebbe essere obbligato a seguire ulteriore addestramento al fine di mantenere la certificazione.

6. Conoscenze tecniche nel campo della Ricostruzione di Incidenti

La conoscenza specialistica nel campo della ricostruzione degli incidenti dovrebbe comprendere:
- la meccanica della collisione
- calcoli tempo - distanza
- conoscenza di base degli incidenti stradali
- aspetti tecnici della biomeccanica delle lesioni e dei meccanismi di lesione
- conoscenze di base dei fattori umani
- tecnologia dei veicoli, con speciale riguardo ai sistemi di sterzatura e frenatura così come alla dinamica dei veicoli
- conoscenza base delle tecniche di simulazione
- conoscenze di base delle tecnologie di riparazione e del calcolo dei costi di riparazione
- tecniche di prova delle frodi assicurative
- tecnica di fotografia digitale e di immagini digitali (correzione/manipolazione di immagini)
- infrastrutture stradali
- principi di diritto penale e interpretazione delle prove
- così come tutta la conoscenza richiesta per eseguire l’esame della scena dell’incidente

7. Remunerazione

La remunerazione di un ricostruttore quando incaricato dal Tribunale dovrebbe essere adeguata, vale a dire comparabile con le tariffe vigenti sul libero mercato.

8. Ricostruttori vs. Esperti nella Stima dei Costi di Riparazione

In molti paesi Europei, la professione dell’estimatore dei costi di riparazione non è chiaramente distinta da quella del ricostruttore di incidenti stradali. Questa situazione è facilitata dall’utilizzo di titoli come ‘esperto di veicoli’ o ‘perito auto’.

Mentre nella stima del costo di riparazione, è richiesta una valutazione sullo ‘stato finale’ (il veicolo danneggiato così come si presenta), nella ricostruzione di incidenti stradali è normalmente necessario determinare dei processi dinamici (per esempio l’avvicinamento dei veicoli al punto di collisione). A parte le conoscenze aggiuntive in vari campi che l’esercizio della ricostruzione degli incidenti richiede, questo approccio dinamico è ciò che la distingue dagli altri campi della conoscenza dei veicoli.

Quindi, un esperto nella stima dei costi di riparazione non ha bisogno di possedere alcuna conoscenza di ricostruzione di incidenti stradali. Sebbene un ricostruttore non abbia bisogno di alcuna conoscenza nella stima dei costi di riparazione per l’effettiva ricostruzione di un incidente, potrebbe comunque essere utile se avesse una conoscenza di base della stima dei costi di riparazione, poiché, a volte, può sorgere la necessità di una valutazione su una particolare stima.
1. Pēdu saglabāšana ceļu satiksmes negadījuma vietā

Pēdu saglabāšana negadījuma vietā parasti ietilpst nevis negadījumu rekonstruktora darbībā, bet aizsargātajiem, kurus iesaistīt nevajadzētu tikai tie pēdu izmeklētājiem. Mēs esam piedāvājuši šo iespēju kvalifikētām ieņemt partizām izmeklētājiem, lai novērstu šo šūnu situāciju.

2. Cēlu satiksmes negadījumu rekonstruktora aizsargātās tituls

Lielākajā daļā Eiropas valstīm ir noteikts, ka šī titula saņemšana ir mainīga no vietas uz vietas. Tāpēc ir nepieciešams noteikt, kādas kvalifikācijas ir nepieciešamas šo titulu iegūšanai. Mēs ieteicam ierobežot šo iespēju tikai tādiem iesaistītājiem, kas parasti mainās no vietas uz vietas, pie šāda titula iegūšanai.

3. Cēlu satiksmes negadījumu izmeklēšana

Pēdu fiksēšana negadījuma vietā ir uzdevums, ko veic nevis negadījumu rekonstruktors, bet aizsargātās titulis. Mēs ieteicam ierobežot šo iespēju tikai tiekiem, kas ir noteikti aizsargātajiem, kurus iesaistīt nevajadzētu tikai šūnu situāciju.

4. Negadījumu rekonstruktora kvalifikācijas

Negadījumu rekonstruēšanai ir jābūt prasībai, ka nevis negadījumu rekonstruktors, bet aizsargātās titulis ir noteikti aizsargātajiem, kurus iesaistīt nevajadzētu tikai šūnu situāciju.

5. Sertifikācija

Kandidātiem, kas piesakās sertifikācijai, ir jākļūst par negadījumu rekonstruktoriem, lai saņemtu šo titulu, kurus iesaistīt nevajadzētu tikai šūnu situāciju.

Lielākajā daļā Eiropas valstīm parasti tiek norādīta, ka šī titula iegūšanai ir noteikts minimums prasības. Mēs ieteicam ierobežot šo iespēju tikai tiekiem, kas ir noteikti aizsargātajiem, kurus iesaistīt nevajadzētu tikai šūnu situāciju.
un pārbaudi neveiktu viena un tā pati institūcija, gadījumā, ja
eksāmena rezultāti saistītas ar finanslām interesēm.

Negadījumu rekonstruktora sertifikācijai vajadzētu būt
īerobežotai laika zinā. Apturēti pēc pieciem gadiem to vajadzētu
atjaunot. Ipašos gadījumos sertificēšanas institūcijai vajadzētu
būt iespējai atpēmēt sertifikātu. Šādos gadījumos negadījumu
rekonstruktora būtu pienākums piederītās tālākās izglītības
pasākumos, lai saglabātu savu sertifikātu.

6. Speciālās zināšanas negadījumu rekonstrukcijā

Speciālās zināšanas ceļu satiksmes negadījumu
rekonstrukcijas nozarē strādājošiem vajadzētu aptvert šādus
jautājumus:
- sadursmes mehāniku;
- ceļa-laika-izvērtējumu;
- pamatzināšanas par biomehāniku un transportlīdzekļu
enerģijas patēriņu;
- pamatzināšanas par mehāniku un biomehāniku attiecībā uz
bojājumu rašanos;
- pamatzināšanas par sadursmes mehāniku;
- automobilju tehniku, iepaši attiecībā uz vadības un bremžu
sistēmu tehnikājām detalām, kā arī automobilja stabilitāti
un vadāmību;
- simulācijas tehnikas pamatzināšanas;
- pamatzināšanas par negadījumu rezultātā iegūto
bojājumu remonta tehnikām un izmaksu kalkulāciju pēc
negadījumiem;
- apdrošināšanas krāpniecību transportlīdzekļu apdrošināšanā
tehnisku atlīdzību;
- digitālo fotogrāfiju un attēlu apstrāde metodē;
- ceļu satiksmes infrastruktūru;
- pamatzināšanas par kriminālistiku un pierādījumu
izvērtēšanu;
- visas zināšanas, kas nepieciešamas pēdu fiksēšanai negadījuma
vietā.

7. Darba apmaksā

Ceļu satiksmes negadījumu rekonstruktora darba apmaksai,
sāņemot pasūtījumus no tiesas, vajadzētu būt atbilstošai, t.i.
salīdzinājumā ar atlīdzību, veicot pasūtījumu brīvajā tirgū.

8. Rekonstrukcijas prestatā remontizmaksu kalkulācijai

Daudzās Eiropas valstīs tehniskā eksperta profesija, kas
nodarbojas ar remontizmaksu aprēķināšanu pēc ceļu satiksmes
negadījumiem, netiek skaidri noskirsta no ceļu satiksmes
negadījumu rekonstruktora profesijas. Doto situāciju attīstīt
atvieglot profesijas nosaukuma „autoeksperts” izmantošana.

Ja, sastādot remontizmaksu kalkulāciju, viss pamatojas uz
ilgstošu, nemainīgu stāvokli (bojāto automobili), tad negadījumu
rekonstrukcijā parasti ir nepieciešams savienot dinamiskus
processus (piemēram, divu transportlīdzekļu tuvošanās sadursmes
punktam). Neatkarīgi no visām papildus zināšanām, ko prasa
negadījumu rekonstrukcija dažādās jomās, šis dinamiskais vai
tiklotais domāšanas veids ir būtisks aspekts šajā darba laukā, kas
atšķir to no citām nozarēm transporta sfērā.

Transportlīdzekļu bojājumu un zaudējumu novērtēšanas
ekspertam nav vajadzīgas negadījumu rekonstrukcijas zināšanas.
Kaut arī negadījumu rekonstruktora profesijas

lietderīgi būtu, ja tam ir vissmaz pamatzināšanas par remontu

tehnoloģiju un izmaksu aprēķināšanu. Dažos gadījumos
negadījumu rekonstruktora tiesā var nākties novērtēt automobilja
bojājumu novērtējumu un aprēķinātās remontizmaksas.
Pasiūlymai Europos Sąjungos Direktyvoms dėl eismo įvykių rekonstravimo:

Pateikiamas tekstas yra 2005.10.20 Bratislavoje vykusio antrojo QUERY darbinio seminario rezoliucijos antrasis pakeistas variantas.

1. Pėsdakų fiksavimas eismo įvykių vietose. Eismo įvykio rekonstravimas

Kelį eismo įvykių atvejų reikia skirti dvi veiklos sritis:
- pėsdakų fiksavimą ir atliekamą tyrimą įgyvendinti, kad būtų galima įgyvendinti atliekamą tyrimą dirbtiniu būdu
- eismo įvykių tyrėjus, kurie atlieka ir vertina fiksuotus duomenis, tačiau ši veikla yra sudėtinga.

2. Kelij eismo įvykius rekonstruojančių specialistų apsaugotieji tituliai

Atliekant eismo įvykio rekonstrukciją, tai reikalingas techninės studijos mokslinį laipsnį gauti, tačiau ši veikla yra sudėtinga. Tai reiškia, kad reikalingas techninės studijos mokslinį laipsnį gauti, tačiau ši veikla yra sudėtinga.

3. Eismo įvykio tyrimas

Pėsdakų fiksavimas eismo įvykio vietoje yra didelis atsakomybės užduotis, todėl ši veikla yra daugiausiai apmokytai darbuotojai. Galioja bendra nuostata, kad šios užduotys negalima patikėti asmenims, turinčiams tai, kad asmenys gali patikrinti, kad šios užduotys negalima patikėti asmenims, turinčiams tai, kad šios užduotys negalima patikėti asmenims, turinčiams.

4. Eismo įvykį rekonstruojančio specialisto kvalifikacija

Atliekant eismo įvykio rekonstrukciją taip, kaip nusakytų aukščiausio lygio kvalifikaciją, tai reiškia, kad reikalingas techninės studijos mokslinį laipsnį gauti, tačiau ši veikla yra sudėtinga. Tai reiškia, kad reikalingas techninės studijos mokslinį laipsnį gauti, tačiau ši veikla yra sudėtinga.
5. Sertifikavimas

Asmenys, pateikę paraškas gauti eismo įvykius rekonstruojančių specialiųjų kvalifikaciją, turi laikyti egzaminą, kurio metu privalo įrodyti turintys specialiųjų eismo įvykių rekonstravimo srities žinių.

Egzaminavimo teisė turėtų būti suteikta ribotam akreditavimo įstaigų skaičiui. Reikia pabrėžti, jog būtų labai svarbu, kad mokymo ir egzaminavimo vykdymo teisė turėtų būti finansuojama nuo veiklo pavaldinčiojį įstaigų skaičiaus

Eismo įvykių rekonstruojančio asmens sertifikato galiojimo laikas turėtų būti ribojamas. Maždaug kas penkerius metus sertifikavimas privalėtų būti atnaujinamas. Sertifikatą suteikianti institucija turi turėti galimybę anuliuoti tai, kurį gautas sertifikatą, tada eismo įvykių rekonstruojojančio specialistas, norintis išlaikyti turimą sertifikatą, privalėtų dalyvauti kituose kvalifikacijos kėlimo mokymuose.

6. Specialiosios eismo įvykių rekonstruojančio specialisto žinios

Eismo įvykių rekonstravimo specialistas privalo turėti šių specialiųjų žinių:
- apie transporto priemonių susidūrimo mechaniką;
- apie atstumo nagrinėjimą laiko atžvilgiu;
- apie pagrindinių biomechanikos ir energijos tvermės dėsnių veikimą transporto priemonėse;
- pagrindinių mechanikos ir biomechanikos žinių apie galimus sužeidimus;
- pagrindinių vairuotojo psichologijos žinių;
- apie transporto priemonių techninę dalį, o ypač apie transporto priemonės vairavimo ir stabdžių sistemas bei stabilumą užtikrinančias detales;
- pagrindinių modeliavimo technikos žinių;
- pagrindinių remonto technologijų ir remonto kaštų po avarijos kalkuliacijos žinių;
- apie techninių draudiminių apgavysčių išaiškinimą;
- apie skaitmenines nuotraukas ir jų apdorojimo metodus;
- apie eismo kelių infrastruktūrą;
- pagrindinių kriminalistikos ir įrodymų vertinimo žinių;
- įvairių kitų žinių, reikalingų fiksuojant pėdsakų eismo įvyko vietoje.

7. Atlygis už darbą

Eismo įvykių rekonstruojojančio specialistas, dirbantis kaip teismo įgaliotasis ekspertas, turi gauti atitinkamą atlygį, t.y. tokį atlygi, koks yra rinkoje tarp įgaliojimus gaunančių specialistų.

8. Rekonstravimo ir remonto kaštų kalkuliacijos palyginimas

Daugelyje Europos šalių nėra aiškiai skirtingi specialistai, sudarantys remonto kaštų po avarijų kalkuliacijas, ir eismo įvykių rekonstruojojančio specialistai. Ši situacija labai supaprastina vartojamos terminas transporto priemonių ekspertas.

Jei remonto kaštų kalkuliacija remiasi ilgalaikia, nekintama būkle (sudažyto automobilo), tai rekonstruojojančio eismo įvykių, dažniausiai reikia susieti dinaminis procesus (pvz., dviejų automobilių artėjimas iki susidūrimo). Rekonstruojojančio eismo įvykių reikia ne tik papildomų įvairių sričių žinių, tačiau būtina gebėti mąstyti dinamiškai ir susieti įvairius aspektus ir tai skiria eismo įvykių rekonstravimą nuo kitų transporto šakos sričių.
Norwegian
Forslag til europeiske retningslinjer for ulykkesutredning.
Den følgende teksten er den verifiserte versjonen av overenskomsten man kom til under den andre QUERY workshop holdt i Bratislava den 20. oktober 2005.

1. Åstedundsøkselser kontra ulykkesutredning
Innen temaet traffikulykker bør det skilles mellom to typer oppgaver:
• Innsamling av bevis og data på åstedet, inkludert oppmåling, sikring av andre bevis som friksjonsforhold etc samt forklaringer fra involverte og vitner.
• Rekonstruksjon av ulykken, det vil si å bruke vitenskaplige metoder for å dra konklusjoner basert på bevismateriale som ble samlet på åstedet.

I de fleste europeiske land utføres den første typen arbeid av politifolk, helst noen med spesiell kompetanse. Vi foreslår å kalle dem “Åstedsgeneraler”.

Den andre typen arbeid bør utføres av personer med en akademisk bakgrunn. Vi foreslår å kalle dette arbeidet ulykkesrekonstruksjon, hvilket må klart skilles fra åstedsgaravangerskning.

I det følgende brukes uttrykket Rekonstruksjonist eller tilsvarende i de forskjellige språk om personer som utfører slikt arbeid. Bruk av for eksempel “teknisk ekspert” eller “bilexpert” bør unngås, og det bør unngås å bruke det for andre i de forskjellige språk om personer som utfører slikt arbeid.

2. Beskyttet tittel for Ulykkesrekonstruksjonist
I de fleste europeiske land er det mest vanlig at man anser en person som har en teknisk sakkundighed i rettsbehandlingen mens man i andre land har et system der hver part har sin egen. Ulykkesrekonstruksjonist er en person som utfører slikt arbeid.

Vi foreslår å kalle denne personen en ”Åstedsgaravangerskning”.

3. Åstedsgranskningskvalifikasjoner
Å samle spor og bevis på et åsted er en oppgave som krever spesielt trenet personell. Det kan vanligvis ikke utføres av en vanlig polititjenestemann.

Vi foreslår å kalle denne personen en ”Åstedsgaranvangerskning”.

4. Kvalifikasjonskrav for en rekonstruksjonist
En rekonstruksjonist er en person som har behov for sikkerhet og spesialfornøyelse i sitt arbeid, derfor er det nødvendig å ha en spesiell kvalifikasjon.

5. Sertifiseringsprosessen
Sertifiseringsprosessen

6. Tekniske kunnskapsområder innefor faget ulykkesutredning
Spesialistkunnskap bør omfatte:
• Kollisjonsmekanikk
• Vei – tid beregninger
• Basiskunnskap om kollisjonsverdier
• Teknisk aspekt ved biomekanikk og skademekanismer.
• Basiskunnskap om menneskelige faktorer
• Kjøretøyteknologi, spesielt styring, bremser og dynamikk
• Basiskunnskaper om simuleringssverktoy
• Basiskunnskap om reparasjonsteknologi og taksering
• Tekniske bevis i bedragerisaker
• Digital fotografering og behandling av fotos
• Infrastruktur
• Basiskunnskap om kriminologi og bevisvurdering
• Kunnskap om åstedsganskning

7. Honorar

Rekonstruksjonistens honorar når vedkommende har oppdrag for det offentlige skal være i samme størrelsesorden som det man ser i det åpne markedet.

8. Forholdet mellom rekonstruksjonist og takstmann

I flere europeiske land er takstmannsrollen ikke klart skilt fra ulykkesutredning. Dette har forårsaket bruk av titler som “kjøretøyekspert”.

Mens man ved taksering bare forholder seg til resultatet av en kollisjon (den skadede bilen) er man innen ulykkesutredning nødt til å forholde seg hvordan skadene oppsto, det vil si en dynamisk prosess. Satt bort fra alle andre kunnskapsområder som kreves av en rekonstruksjonist er det i første rekke denne framgangsmåten som skiller en rekonstruksjonist fra andre områder innen teknisk ekspertise.

En takstmann trenger ikke ha kompetanse innen ulykkesutredning for å gjøre sin jobb. En rekonstruksjonist trenger strengt tatt heller ikke ha kunnskap om taksering, men det vil være en fordel om vedkommende har grunnleggende kunnskap om dette som en hjelp i sin utredning.
1. Badanie miejsca wypadku a rekonstrukcja wypadku

W odniesieniu do wypadków z udziałem pojazdów należy rozróżnić dwa rodzaje prac:

- zbieranie dowodów i danych na miejsce wypadku, w tym również pomiary (np. opóźnienia), zabezpieczenie utratnych (nietrwałych) dowodów i przeprowadzanie wywiadów na miejscu zdarzenia;
- rekonstrukcję wypadków drogowych, tzn. użycie naukowych metod dla celów wypracowania wniosków na bazie dowodów zebranych na miejscu zdarzenia.

W większości krajów europejskich, pierwszy z wymienionych typów prac przeprowadzany jest przez personel policjany, najlepiej jeśli jest specjalistycznie wyszkolony. Sugeruje się określanie tego specjalnie przeszkolonego personelu policyjnego nazwą „badacz miejsca wypadku” (accident scene examiner); w Polsce czasem używa się nazwy „likwidator miejsca zdarzenia”.

Drugi typ prac powinien być prowadzony przez osoby posiadające wykształcenie akademickie. Sugeruje się nazywanie tej pracy rekonstrukcją wypadków. Należy wyraźnie odróżnić tę grupę osób od grupy pierwszej.

W dalszym ciągu, do opisania pracy, jaką wykonuje ta druga grupa osób, będziemy je nazywać biegłymi ds. rekonstrukcji wypadków drogowych lub innymi, porównywalnymi terminami w poszczególnych językach. W celu uniknięcia niejasności, nie należy używać terminu „ekspert techniczny” lub „expert samochodowy”.

Holandia i Wielka Brytania nie zgadzają się na wprowadzenie wymogu kwalifikacji akademickich w odniesieniu do osób mianowanych jako biegli ds. rekonstrukcji wypadków. W tych krajach, gdzie system zbierania powypadkowych danych i śladów oraz ich analiza dokonywana jest na miejscu zdarzenia przez przedstawicieli Policji, należy prowadzić specjalistyczne szkolenie i zapewnić im możliwość zdobycia odpowiedniej praktyki.

W przypadku szczególnie złożonych wypadków, lub takiego, które wymaga stosowania praw fizyki i operowania matematyką na poziomie, który wykracza poza umiejętności przeprowadzającego badanie policjanta, jego opinia musi zostać potwierdzona przez odpowiedniego eksperta (policyjnego lub innego), który posiada odpowiednią wiedzę i doświadczenie. W tych przypadkach musi zostać osiągnięta równoważa pomiędzy tymi, którzy posiadali kwalifikacje akademickie a tymi, którzy dysponują istotnym doświadczeniem praktycznym.

2. Ochrona tytułu biegłego ds. rekonstrukcji wypadków drogowych

W większości krajów europejskich powszechne jest w czasie procesu sądowego korzystanie z jednego tylko biegłego. W niektórych jednak krajach regularnie korzysta się z dwóch biegłych, po jednym dla każdej ze spierających się stron. Korzystanie w procesie sądowym z jednego tylko biegłego stawia poważne wymagania w stosunku do jego kwalifikacji i postawy moralnej: wyrokowanie oparte jest wówczas o sformułowane przez niego specjalistyczne stwierdzenia, których weryfikacja przez niespecialistę jest niemożliwa.

W celu zagwarantowania odpowiednich kwalifikacji i postawy moralnej, należy wprowadzić system kontroli jakości biegłych. Osoby, które w ramach tego systemu otrzymają certyfikat, powinny otrzymywać chroniony prawnie tytuł (i odpowiednią pieczęć), co umożliwi jednoznaczne odróżnienie ich od innych, samozwańczych ekspertów.

System certyfikacji, o którym mowa, powinien być porównywalny z systemem nadawania analogicznych uprawnień zawodowych w innych specjalnościach, takich jak posiadają lekarze i prawnicy.

3. Badanie miejsca wypadku

Zbieranie dowodów na miejscu poważnych wypadków drogowych jest zadaniem, które wymaga wielkiej odpowiedzialności. Dlatego też powołuje się w tym celu specjalnie przeszkolony personel. Te czynności nie powinny być wykonywane przez szejkowych, nieprzeszkolonych policjantów.

Generał, do prowadzenia prac przy zabezpieczaniu miejsca zdarzenia nie jest potrzebny personel o kwalifikacji akademickich, natomiast działanie tego personelu powinno być oparte na odpowiednio przygotowanej dokumentacji wzorcowej, zawierającej algorytm postępowania oraz listę wymagań, wskaźówek i druki protokołów paszportowych czynności.

W przypadku złożonych wypadków drogowych, możliwe jest (choćby częściowe) dokonywanie rekonstrukcji wypadku na miejscu zdarzenia, jednakże, dla uzyskania fachowej pomocy przy zabezpieczaniu dowodów pożądane jest wezwanie na miejsce biegłego ds. wypadków drogowych.

4. Kwalifikacje biegłych ds. wypadków drogowych

Rekonstrukcja przebiegu wypadku (uprzednio zdefiniowana) często wymaga głębokiej wiedzy z zakresu fizyki oraz zasad techniki, która to wiedza w zasadzie wymaga ukończenia wyższych studiów technicznych, a więc nie jest dostępna bez specjalistycznych studiów. Biegły ds. wypadków drogowych wymagane jest posiadanie stopnia uniwersyteckiego w zakresie mechaniki lub faktyzowanej pokrewej dziedziny wiedzy. Jednakże samo posiadanie stopnia uniwersyteckiego nie jest wystarczające do prowadzenia tego typu działalności. Do tego wymagana jest specjalistyczna wiedza teoretyczna i praktyka w danej dziedzinie.

Odnosząc do odpowiedzi teoretycznych, możliwym rozwiązaniem problemu są odpowiednie studia podyplomowe. Jest to rozwiązanie lepsze, niż dokształcanie w trakcie już wykonywanej pracy. Z drugiej jednak strony, nabycie wiedzy praktycznej niezbędnej w tej dziedzinie wymaga co najmniej 3 lat praktyki. Ponadto, biegły ds. wypadków drogowych powinien posiadać również praktyczną wiedzę o systemie prawnym kraju w którym podejmuje
taką działalność, w tym zasad zbierania dowodów oraz kodeksu postępowania karnego.

Biegły do spraw wypadków drogowych musi posiadać prawo jazdy przynajmniej kategorii B. Zalecane jest posiadanie innych kategorii: A i C1–CE. Samo posiadanie prawa jazdy danej kategorii na ogół nie gwarantuje odpowiedniej praktyki w prowadzeniu pojazdów tej kategorii. Posiadanie rzeczywistej praktyki w prowadzeniu pojazdów jest niezbędne dla oceny zachowania się kierowców poszczególnych kategorii pojazdów.

5. Procedura certyfikacji biegłych

Kandydat, który chce uzyskać certyfikację jako biegły ds. wypadków drogowych, musi zdąć odpowiedni egzamin, w celu udowodnienia posiadania specjalistycznej wiedzy w tej dziedzinie.

Egzamin powinien być prowadzony przez ograniczoną liczbę akredytowanych instytucji. Jest rzeczą zasadniczą, aby szkolenie i egzaminowanie nie były prowadzone przez tę samą instytucję. Chodzi o to, żeby wynik egzaminu nie był w jakikolwiek sposób uzależniony od interesów finansowych.

Certyfikacja biegłego powinna być ważna na czas określony i okresowo odnawiana, w przybliżeniu co 5 lat. W drastycznych przypadkach, instytucja, która udzieliła certyfikacji może ją wycofać. Wówczas, aby odzyskać certyfikat, biegły powinien obowiązkowo odbyć kolejne szkolenie.

6. Techniczna wiedza w zakresie rekonstrukcji wypadków drogowych

W zakres wiedzy technicznej wymaganej na polu rekonstrukcji wypadków drogowych powinny wchodzić:

• mechanika zderzeń,
• obliczenia zależności droga-czas,
• podstawowa wiedza z zakresu bezpieczeństwa biernego pojazdów (crashworthiness),
• techniczne aspekty biomechaniki oraz powstawania obrażeń,
• podstawowa wiedza dotycząca czynnika ludzkiego (kierowcy),
• znajomość mechaniki ruchu pojazdów, w szczególności dynamiki jazdy, skręcania i hamowania,
• podstawowa wiedza o technikach symulacyjnych,
• podstawowa wiedza o technologii napraw oraz kalkulacji ich kosztów,
• techniczne podstawy weryfikacji przestępstw ubezpieczeniowych,
• fotografia cyfrowa i techniki cyfrowej obróbki zdjęć (korekcja/manipulacja),
• infrastruktura drogowa,
• podstawy kryminalistyki i interpretacji śladow,
• wiedza wymagana do prowadzenia oględzin miejsca wypadku.

7. Wynagrodzenie

Wynagrodzenie biegłego ds. wypadków drogowych wykonywującego zlecenia na rzecz sądu powinno być odpowiednie i porównywalne do tego, jakie można otrzymać za taką samą pracę na wolnym rynku.

8. Biegły ds. wypadków drogowych a ekspert do ustalania kosztów napraw

W wielu krajach europejskich, zawód polegający na kalkulacji kosztów naprawy powypadkowej nie odróżnia się wyraźnie od zawodu biegłego ds. rekonstrukcji wypadków drogowych. Dla uproszczenia stosuje się jedną nazwę „KFZ-Sachverständige” – „ekspert ds. samochodowych”.

Podczas gdy kalkulacja kosztów naprawy dotyczy stanu trwałego i niezmienionego, to w przypadku rekonstrukcji wypadków zwykle konieczne jest uwzględnianie procesów dynamicznych (np. procesu zbliżania się pojazdów do punktu kolizyjnego). Pomijając całą dodatkową, wieloaspektową wiedzę niezbędną do rekonstrukcji wypadków, to właśnie ten dynamiczny aspekt wyróżnia rekonstrukcję wypadku od innych dziedzin, mieszczących się w ramach ogólnie pojętej ekspertyzy samochodowej.

Zatem dla rzeczoznawcy ds. szkód i wyceny nie jest potrzebna wiedza z zakresu rekonstrukcji wypadków. Jakkolwiek biegły ds. rekonstrukcji wypadków nie potrzebuje w konkretnej sprawie wiedzy z zakresu kalkulacji kosztów powypadkowej, to może być pożyteczne, gdyby posiadał przynajmniej podstawową wiedzę dotyczącą technologii napraw i kalkulacji kosztów. Jest on bowiem często przed sądem proszony o dokonanie oceny szkody pojazdu i wycenienia naprawy.
Portuguese

Proposta de Directriz Europeia para a Reconstrução de Acidentes:

O texto seguinte é a versão corrigida e editada dos acordos alcançados na 2ª reunião do projecto QUERY, realizada em Bratislava em 20 de Outubro de 2005.

1. Inspeção do Local do Acidente vs. Reconstrução do Acidente

No respeitante aos acidentes de viação, devem distinguir-se dois tipos de trabalho:

- recolha de evidências e dados no local dum acidente, incluindo medições (e.g. desaceleração), conservação de evidências efémeras e registo das declarações.
- reconstrução de acidentes, i.e. a utilização de métodos científicos com o propósito de retirar conclusões das evidências recolhidas no local do acidente.

Na maioria dos países Europeus, o primeiro tipo de trabalho é feito por agentes da polícia, preferencialmente com formação específica. Para pessoas especificamente treinadas para esta função, sugerimos a denominação de examinadores do local do acidente.

O segundo tipo de trabalho, deve ser feito por pessoas com qualificação académica adequada. Sugerimos denominar este tipo de trabalho de reconstrução de acidentes, e distinguir claramente esta profissão do grupo referido anteriormente.

Consequentemente, utilizaremos o termo reconstrutor, ou terminologia comparável noutros idiomas, para descrever pessoas que façam este tipo de trabalho. A utilização de termos como “peritos de sinistros” ou “peritos técnicos de acidentes”, devem evitar-se porque implicam ambiguidades.

Os Países Baixos e o Reino Unido não estão de acordo com os requisitos de qualificação académica:

Nestes países, onde está vigente um sistema de recolha e análise de dados no local do acidente pelas autoridades policiais, devia-se providenciar formação e instrução adequadas.

Sempre e quando uma investigação for particularmente complexa, ou envolva a aplicação de princípios da física ou complexos cálculos matemáticos que estão para lá da experiência do agente de investigação, a evidência deve ser validada por um especialista apropriado (seja agente policial ou não) que tenha o conhecimento e experiência necessárias. Nestes casos, deve procurar-se um equilíbrio entre aqueles que possuam uma qualificação académica e aqueles que essencialmente têm experiência prática.

2. Título Protegido para Reconstrutor de Acidentes

Na maioria dos países Europeus, o mais comum é comparecer um só perito técnico (“conjuntamente”) em tribunal, enquanto noutros países é habitual apresentarem-se dois peritos, um para da cada parte litigante. A presença de um só perito em tribunal, requer rigorosas exigências sobre a sua qualificação assim como da integridade moral: a litigância é baseada nas conclusões elaboradas pelo reconstrutor, que alguém não especialista na matéria não está em condições de escrutinar em detalhe.

Para assegurar a qualificação e a integridade moral, um sistema de controlo de qualidade precisa de ser instalado. As pessoas que sejam certificadas por este sistema de controlo de qualidade, deveria ver atribuído um título protegido (e preferencialmente um selo), que permita a não especialistas distinguí-los dos auto-intitulados peritos.

Este sistema deveria ser comparável à gestão dos títulos noutras profissões, tais como médicos e advogados.

3. Inspeção do Local do Acidente

A recolha de evidências no local de um acidente grave, é uma tarefa que implica uma grande responsabilidade, e por isso requer ser executado por pessoal especialmente treinado. Normalmente não pode ser efectuado por agentes da polícia comuns.

Em geral, este examinador do local do acidente não precisa de ter uma qualificação académica, já que a recolha de evidências pode, depois de treino adequado, apoiar-se em boa medida em listagens pré-preparadas de directrizes e requisitos.

No caso de um acidente complexo, uma reconstrução (parcial) do acidente no local, poderia ajudar a recolha de evidências, sendo por isso necessária a assistência de um reconstrutor.

4. Qualificação de um Reconstrutor de Acidentes

A reconstrução de um acidente (como definido anteriormente) requer com frequência um profundo conhecimento de princípios físicos e técnicos, que geralmente só se podem adquirir através de estudos técnicos. Um grau universitário em engenharia mecânica, física, ou comparável, é por isso um pré-requisito para vir a ser um reconstrutor.

Contudo, um grau universitário por si só não é suficiente para levar a cabo este trabalho. Requer-se prática e conhecimento teórico específico nesta matéria.

Respeitante à qualificação teórica, estudos de pós-graduação são uma abordagem possível e seria preferível ao simples treino profissional. Por outro lado, o conhecimento prático só pode ser adquirido através da prática profissional, sendo necessário pelo menos de 3 anos de experiência. Para além disso, os reconstrutores devem ter um conhecimento básico do sistema judicial do país em que trabalham, incluindo os códigos de procedimento e regras de evidência.

Os reconstrutores precisam de ter, pelo menos, a licença de condução da categoria B, e é recomendável terem as da categoria A e C1-CE. Ter uma licença de condução dumra categoria em particular, não assegura, em geral, suficiente experiência de condução na mesma. A experiência de condução é necessária, para nomeadamente avaliar o comportamento de um veículo e do seu condutor.

5. Processo de Certificação

Os candidatos que desejem receber a certificação como reconstrutores deveriam ter de passar um exame, para provar o seu conhecimento como especialista na área da reconstrução de acidentes.

Tais provas deveriam ser realizadas por um número limitado e acreditado de instituições. Seria essencial que a formação e o exame não fossem efectuados pela mesma instituição, se o resultado do exame confluir com interesses financeiros.

A certificação de reconstrutor deveria uma validade limitada no tempo, e deveria ser renovada cada 5 anos. A instituição que levar a cabo a certificação deveria estar autorizada, em casos extremos, a retirá-la. Em tal situação, o reconstrutor certificado...
deveria obrigatoriamente ter formação complementar, para manter a certificação.

6. Conhecimentos Técnicos na área da Reconstrução de Acidentes

O conhecimento especializado na área da reconstrução de acidentes deverá incluir:
- mecânica de colisões
- cálculos espaço-tempo
- conhecimentos básicos do comportamento dos veículos em colisões
- aspectos técnicos de biomecânica e de mecânica de lesões
- conhecimentos básicos dos factores humanos
- tecnologia de veículos, especialmente no respeitante aos sistemas de direcção e travagem, assim como dinâmica dos veículos
- conhecimentos básicos de técnicas de simulação
- conhecimentos básicos de técnicas de reparação e cálculo de custos de reparação
- prova técnica de fraude em seguros
- fotografia digital e técnicas de imagem digital (correcção/manipulação de imagens)
- infraestrutura rodoviária
- conhecimentos básicos de criminologia e interpretação de evidências
- assim como todos os conhecimentos requeridos para inspecionar o local do acidente

7. Remuneração

Quando contratado pelo tribunal, a remuneração do reconstrutor deverá ser adequada, i.e. comparável à que obteria no mercado livre.

8. Reconstrutores vs. Peritos Avaliadores de Sinistros

Na maioria dos países Europeus, a profissão de avaliação de custos de reparação não está claramente distinguida da de reconstrução de acidentes. Esta situação é facilitada por denominações profissionais como "perito automóvel".

Enquanto no orçamento de reparação, a avaliação é feita a partir do "estado final" (o veículo danificado tal como está), na reconstrução de acidentes é frequentemente necessário determinar o processo dinâmico (por exemplo a aproximação dos veículos ao ponto de colisão). Para além de todos os conhecimentos adicionais que os vários campos da prática da reconstrução de acidentes requerem, a abordagem dinâmica é o que a distingue das outras áreas da peritagem de veículos.

Assim, um perito de avaliação de custos de reparação não precisa de ter nenhum conhecimento sobre reconstrução de acidentes. Enquanto um reconstrutor de acidentes não precisa de ter conhecimentos de avaliação de custos de reparação para a reconstrução de um acidente, pode ser útil o reconstrutor ter um conhecimento básico de orçamentação, dado que pode surgir a necessidade de avaliar um orçamento.
Slovak

Návrhy na európske smernice v rekonštrukciu dopravných nehôd:

Nasledujúci text je prepracovaná verzia výsledkov druhého QUERY Workshopu, ktorý sa konal dňa 20.10.2005 v Bratíslave.

1. Zabezpečenie stôp na mieste dopravnej nehozy verzu rekonštrukcia dopravnej nehozy.

Pri cestných dopravných nehodách musíme rozlišovať medzi 2 pracovnými oblasťami:
- zabezpečenie stôp na mieste nehozy, vrátane zamerania (napr. brzdných stôp), zabezpečenie stôp, ktoré ľahko zmiznú, ako aj výpočtu zúčastnených, alebo prípadných svedkov
- rekonštrukcia nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy

Vo všetkých európských krajínach je zabezpečenie stôp vykonávané policiou, predovšetkým úradníkmi, ktorí majú špeciálne vzdelanie. Navrhujeme, aby sme v budúcnosti takéto osoby označovali ako výšetrovatelov dopravných nehôd.

Činnosti v druhej pracovnej oblasti rekonštrukcie dopravných nehôd by mali byť vykonávané akademicky vzdelanými osobami.

Navrhujeme, nazvať tento pracovný okruh pojmom Rekonštrukcia nehozy (´accident reconstruction´ resp. Analýza nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy).

Vo všetkých európskych krajínách je zabezpečenie stôp vykonávané policiou, prípadným úradníkom, ktorí majú špeciálne vzdelanie. Navrhujeme, aby sme v budúcnosti takéto osoby označovali ako výšetrovatelov dopravných nehôd.

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2. Chránený titul analytikov dopravných nehôd.

Vo všetkých európskych krajínách je zabezpečenie stôp vykonávané policiou, prípadným úradníkom, ktorí majú špeciálne vzdelanie. Navrhujeme, aby sme v budúcnosti takéto osoby označovali ako výšetrovatelov dopravných nehôd.

Činnosti v druhej pracovnej oblasti rekonštrukcie dopravných nehôd by mali byť vykonávané akademicky vzdelanými osobami.

Navrhujeme, nazvať tento pracovný okruh pojmom Rekonštrukcia nehozy (´accident reconstruction´ resp. Analýza nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy).

3. Vyšetrovanie nehody

Zabezpečenie stôp na mieste nehody je úlohou, ktorá zo sebou prináša viacero aspektov a je preto vyžaduje špeciálne výšklený personál. Generálne môže byť táto činnosť vykonávaná zosnovanými a prípadnými politikami.

Vo všetkých európskych krajínách je zabezpečenie stôp vykonávané policiou, prípadným úradníkom, ktorí majú špeciálne vzdelanie.

Navrhujeme, aby sme v budúcnosti takéto osoby označovali ako výšetrovatelov dopravných nehôd.

Činnosti v druhej pracovnej oblasti rekonštrukcie dopravných nehôd by mali byť vykonávané akademicky vzdelanými osobami.

Navrhujeme, nazvať tento pracovný okruh pojmom Rekonštrukcia nehozy (´accident reconstruction´ resp. Analýza nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy).

4. Kvalifikácia analytikova nehôd

Rekonštrukcia nehody v hore uvedenom zmysle vyžaduje obyčajne rozsiahle znalosti fyzikálnych a technických princípov, ktoré môžu byť vo všetkých európskych krajínách získané iba technickým štúdiom. Ukončené univerzitné vzdelanie v strojárstve, fyzike, alebo povolitelnom období preto predpokladom životnej dráhy analytika nehôd. Samotné univerzitné vzdelanie nie je dôležité, aby sa vyšetrovala nehoda.

Postgraduálné študijné kurzy sú možné tým, aby sa všetky inštitúcie organizovali. Analytici nehôd by mali minimálne tri roky právnického vzdelania. Ďalej by mali analytici nehôd mať aspoň základné znalosti právneho systému krajiny, ktoré môžu byť vo všeobecnosti získané iba technickým štúdiom.

Navrhujeme, aby sme v budúcnosti takéto osoby označovali ako výšetrovatelov dopravných nehôd.

Činnosti v druhej pracovnej oblasti rekonštrukcie dopravných nehôd by mali byť vykonávané akademicky vzdelanými osobami.

Navrhujeme, nazvať tento pracovný okruh pojmom Rekonštrukcia nehozy (´accident reconstruction´ resp. Analýza nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy).

5. Certifikácia

Kandidáti, ktorí požiadané o certifikáciu, môžu získat skúšku, ktorá potvrdí ich špecializované znalosti v oblasti analyzy nehôd. Takéto skúšky by mali byť vykonávané obmedzeným počtom akreditovaných inštitúcií. Súčasne je dôležité, aby sa zabezpečilo, aby skúškované mestnosti bolo možné získať príslušnú skúšku.

Certifikát analytika nehôd by mali byť časovo ohraničené. Vo všetkých európskych krajínách je zabezpečenie stôp vykonávané policiou, prípadným úradníkom, ktorí majú špeciálne vzdelanie.

Navrhujeme, nazvať tento pracovný okruh pojmom Rekonštrukcia nehozy (´accident reconstruction´ resp. Analýza nehozy, t.j. použitie vedeckých metód pre získanie záverov zo stôp, zadokumentovaných na mieste nehozy).

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zaviazaný absolovovaním ďalších vzdelávacích aktivít na to, aby si mohol certifikát ponechať.

6. Špeciálne znalosti v rekonštrukcii dopravných nehôd.
Špeciálne znalosti z oblastí rekonštrukcie dopravných nehôd by mali obsahovať nasledujúce body:

- mechanika kolízie
- závislosť dráha – čas
- základy biomechaniky a deformačná energia vozidiel
- základy mechaniky a biomechaniky vo vztahu k zraneniam
- základy psychológie vodiča
- technika vozidiel, predovšetkým vo vztahu k stavebným prvkom riadenia a brzdového systému, ako aj jazdnej stabilité
- základné znalosti simuláčnej techniky
- základné znalosti technik opravy poškodení po nehode a kalkulácie nákladov na opravu
- technické objasnenie poistovacieho podvodu s vozidlami
- digitálna fotografia a metódy opracovania obrázkov
- dopravné inžinierstvo
- základné znalosti kriminalistiky a hodnotenie dôkazov
- ako aj všetky poznatky, ktoré sú potrebné na zabezpečenie stôp na mieste nehody

7. Odmena za prácu
Odmena analytika nehôd pri objednaní súdom by mala byť primeraná, t.j. porovnateľná, ako pri objednávke cez voľný trh.

8. Rekonštrukcia vs. kalkulácia nákladov na opravu

V mnohých európskych krajinách nie je povolanie, ktoré sa zaobiera kalkuláciou nákladov na opravu výrazne odlíšené od analytika dopravných nehôd. Súčasná situácia je zlahčená používaním titulu automobilový znalec.

Pokiaľ pri kalkulácii nákladov na opravu sa vychádza z trvalého, nezmeneného stavu poškodeného vozidla je v analýze dopravných nehôd nutné spájať dynamické procesy (napr. približenie dvoch vozidiel do jedného kolíznego bodu). Odhliadnuť od všetkých dodatočných poznatkov, ktoré analýza nehôd v rôznych oblastiach vyžaduje, je tento spôsob myslenia významným aspekтом tohto pracovného odboru, ktorý ho odlišuje od ostatných oblastí automobilovej branche.

Znalec pre ohodnocovanie a škody tiež nepotrebuje znalosti z analýzy nehôd. Zatiaľ, čo analytik nehôd pre samotnú rekonštrukciu nepotrebuje znalosti o kalkulácii nákladov na opravu je predsa len užitočné, ak má aspoň základné vedomosti o technológii opravy a kalkulácii nákladov. Pretože v mnohých prípadoch pred súdom musí analytik nehôd vykonáť aj ohodnotenie vozidla a posúdiť kalkuláciu nákladov na opravu.
Slovenian

Predlog za evropske smernice glede rekonstrukcij prometnih nezgod

Spodnje besedilo je lektorirana in recenzirana verzija sklepow, doseženih na 2. delavnici QUERY, ki je bila v Bratislavi dne 20. oktobra 2005

1. Pregled kraja prometne nezgode in rekonstrukcija prometne nezgode

Pri prometnih nezgodah, v katere so vpletena vozila, je treba ločiti med dvema vrstama delava. Predlagamo, da se taka usposobljena oseba poimenuje preiskovalcek kraja nezgode (accident scene examiner).

V večini evropskih držav prvo vrsto nalog opravljajo policisti, ki so, če je mogoče, posebej usposobljeni za tako delo. Predlagamo, da se ta usposobljena oseba poimenuje preiskovalcek kraja nezgode (accident scene examiner).

Drugo vrsto nalog naj bi opravljale osebe s akademskim znanjem in izkušnjama, ki jih lahi pri čudovitih dela mogoče opraviti ob upoštevanju vnaprej pripravljenega sequenca navodil in zahtev.

Zbiranje dokazov na kraju hude prometne nezgode je naloga, ki je povezana z veliko mero odgovornosti in zato zahteva posebej usposobljeno osebo. Običajno je ta usposobljena oseba ocenjena na zahtevo obci, ki nje prizna, in vendar pa je treba pojasniti, da bi tega delo lahko opravilo le omejeno število oseb.

2. Zaščiteni naziv rekonstruktor prometnih nezgod

V večini evropskih držav na sojenju običajno nastopi le en (skupen) tehnični izvedenec, medtem ko nekatere druge države dejanske uporabljajo dva izvedenca, po enega za vsako stroko v postopku. Uporaba le enega izvedenca v sodnem postopku postavlja zelo hude zahteve njegovemu znanju in moralni integriteti. Sedanji postopek namreč temelji na zaključkih izvedenca, ki jih lahko ne more podrobno preveriti.

Da bi zagotovili kvalifikacije in moralno integriteto je treba vzpostaviti sistem nadzora kakovosti. Osebam, katerih izvedensko znanje se v tem sistemu nadzora kakovosti potrdi, se podeli zaščiteni naziv (in, če je mogoče, ustrezen žig), ki te pooblaščene osebe razlikuje od samoimenovanih strokovnjakov.

Tak sistem je primerljiv s nadzorom proizvodov v drugih podobnih primerih, na primer pri hospitali v Združenem kraljestvu Velike Britanije.

3. Preiskava kraja prometne nezgode

Zbiranje dokazov na kraju hude prometne nezgode je naloga, ki je povezana z veliko mero odgovornosti in zato zahteva posebej usposobljeno osebo. Običajno je ta usposobljena oseba ocenjena na zahtevo obci, ki nje prizna, in vendar pa je treba pojasniti, da bi tega delo lahko opravilo le omejeno število oseb.

Na splošno, preiskovalcek kraja prometne nezgode ne potrebuje akademskih kvalifikacij, saj je zbiranje dokazov po opravljenem ustreznem usposabljanju mogoče opraviti ob upoštevanju vnaprej pripravljenega sequenca navodil in zahtev.

Sistem nadzora kakovosti je treba vzpostaviti na podlagi izvedenca, ki je mogoče opraviti ob ustreznem usposabljanju in podlagi izvedenca, ki je mogoče opraviti ob ustreznem usposabljanju.

Zbiranje dokazov na kraju hude prometne nezgode je naloga, ki je povezana z veliko mero odgovornosti in zato zahteva posebej usposobljeno osebo. Običajno je ta usposobljena oseba ocenjena na zahtevo obci, ki nje prizna, in vendar pa je treba pojasniti, da bi tega delo lahko opravilo le omejeno število oseb.

4. Kvalifikacije rekonstruktorja prometnih nezgod

Rekonstrukcija prometne nezgode (kot je opredeljena zgornj) pogosto zahteva natančno poznavanje fizikalnih in tehničnih pravil, ki jih je načeloma mogoče osvojiti le s študijem tehničnih ved. Zato je univerzitetna diploma iz strojništva, fizike ali druge primerljive smeri predpogo za to, da se oseba postane rekonstruktor prometnih nezgod.

Vendar pa univerzitetna diploma sama po sebi ne zadošča za uspešno opravljanje dela. Potrebno je posebno praktično in teoretično znanje dobro izvedenca, ki te pooblaščene osebe razlikuje od samoimenovanih strokovnjakov.

Zbiranje dokazov na kraju prometne nezgode je naloga, ki je povezana z veliko mero odgovornosti in zato zahteva posebej usposobljeno osebo. Običajno je ta usposobljena oseba ocenjena na zahtevo obci, ki nje prizna, in vendar pa je treba pojasniti, da bi tega delo lahko opravilo le omejeno število oseb.

5. Postopek imenovanja

Kandidati, ki želijo pridobiti naziv pooblaščeni rekonstruktor, morajo ustrezno zavedati, da bi tega delo lahko opravilo le omejeno število oseb.

Postopek imenovanja

Kandidati, ki želijo pridobiti naziv pooblaščeni rekonstruktor, morajo ustrezno zavedati, da bi tega delo lahko opravilo le omejeno število oseb.
primeru se mora pooblaščeni rekonstruktor udeležiti nadaljnega usposabljanja, če želi obdržati svojo licenco.

6. Tehnično znanje na področju rekonstrukcije prometnih nezgod

Specialistično znanje s področja rekonstrukcije prometnih nezgod mora zajemati:
- mehaniko trkov,
- izračune časa in razdalj,
- osnovno znanje o trkih vozil,
- tehnične vidike biomehanike poškodb in mehanike poškodb,
- osnovno znanje o psihologiji prometa,
- tehnologijo vozil, zlasti glede sistemov krmiljenja in zaviranja ter dinamike vozila,
- osnovno znanje tehnik simulacije,
- osnovno znanje tehnik simulacije,
- osnovno znanje tehnik simulacije,
- tehnologijo vozil, zlasti glede sistemov krmiljenja in zaviranja ter dinamike vozila,
- osnovno znanje tehnik simulacije,
- osnovno znanje tehnik simulacije,
- temelji kriminalistike in interpretacije dokaznega građiva,
- kot tudi znanje, potrebno za rekonstrukcijo kraja prometne nezgode.

7. Nagrajevanje

Nagrajevanje rekonstrukcije, ki ga najame sodišče, mora biti enakorodno ceniti njegove storitve na prostem trgu.

8. Rekonstruktor proti izvedencu za oceno stroškov popravila

V mnogih evropskih državah se poklic ocenjevalca stroškov popravila ne loči od rekonstrukcije prometne nezgode. K taki situaciji še prispevajo nazivi kot so “izvedenec za vozila”.

Medtem ko je pri ocenjevanju stroškov popravila potrebna presoja o končnem stanju (poškodovano vozilo v zatečenem stanju), je pri rekonstrukciji nesreče ponavadi pomembno ugotoviti dinamične procese (npr. pot vozil do točke trka), ki so do nezgode vodili. Poleg vsega dodatnega znanja z različnih področij, ki jih zahteva praksa rekonstrukcije prometnih nezgod, je ta dinamični pristop tisto, kar rekonstrukcijo prometnih nezgod ločuje od ostalih strokovnih področij, povezanih z vozili.

Zato izvedenec za oceno stroškov popravila ne potrebuje nobenega znanja o rekonstrukciji nezgode. Čeprav rekonstruktor nezgod ne potrebuje nobenega znanja s področja ocenjevanja stroškov popravila, je za dejansko rekonstrukcijo lahko koristno, če ima rekonstruktor osnovno znanje s tega področja, saj se občasno pojavijo potreba po presoji določene ocene.
Spanish

Propuesta de Directrices Europeas en Reconstrucción de Accidentes:
El siguiente texto es la versión corregida y editada de los acuerdos alcanzados en la 2ª reunión de trabajo del proyecto QUERY, celebrada en Bratislava el 20 de octubre de 2005.

1. Inspección de la Escena del Accidente vs. Reconstrucción del Accidente

En relación con los accidentes de tráfico, se debe distinguir entre dos tipos de trabajo:

- Recogida de evidencias y datos en la escena de un accidente, incluyendo mediciones (p.e. deceleración), conservación de evidencias efímeras y toma de manifestaciones.
- Reconstrucción del accidente, i.e. el uso de métodos científicos con el propósito de obtener conclusiones a partir de las evidencias recogidas en la escena de un accidente.

En la mayor parte de países europeos el primer tipo de trabajo es llevado a cabo por agentes de policía, preferiblemente con formación específica. Nosotros sugerimos denominar a estas personas especialmente formadas examinadores de la escena del accidente.

El segundo tipo de trabajo debería ser realizado por personas con una titulación académica. Nosotros sugerimos denominar este tipo de trabajo reconstrucción de accidentes, y distinguir claramente esta profesión de la nombrada en el grupo anterior.

En lo sucesivo utilizaremos el término reconstructor, o términos comparables en los distintos idiomas, para describir a las personas que realizan este trabajo. El empleo de términos como “perito técnico” o “perito mecánico” debería evitarse ya que implican ambigüedades.

- Los Países Bajos y el Reino Unido no están de acuerdo en el requerimiento de titulación académica.
- En estos países, donde está vigente un sistema de recogida de datos en la escena del accidente y de análisis por las autoridades policiales, debería proporcionarse a estos la formación y educación adecuadas.

Siempre y cuando una investigación resulte particularmente compleja, o la misma implique aplicación de leyes físicas o complejos cálculos matemáticos, que estén más allá de la experiencia del agente a cargo de la investigación, las evidencias deberían ser validadas por un perito apropiado (ya sea agente de policía o no) que tenga el conocimiento y la experiencia necesarios. En esos casos debe alcanzarse un equilibrio entre aquellos que posean titulaciones académicas y aquellos con la esencial experiencia práctica.

2. Título Protegido para los Reconstrutores de Accidentes

En la mayoría de países europeos lo más frecuente es utilizar solamente un perito técnico (“conjunto”) en el juicio, mientras que en algunos países se presentan a menudo dos peritos, uno por cada una de las partes litigantes. El empleo de un solo perito en un juicio demanda rigurosas exigencias sobre su cualificación e integridad moral: el litigio está basado en las conclusiones alcanzadas por el reconstructor, las cuales no pueden ser contrastadas en detalle por una persona no experta en la materia.

Al objeto de garantizar la cualificación y la integridad moral debería establecerse un sistema de control de calidad. A aquellas personas que resulten certificadas por este sistema de control de calidad se les debería asignar un título protegido (y preferiblemente un sello) que permitiera a personas no expertas distinguir a los reconstrutores certificados de aquellos que se auto-proclaman peritos.

Este sistema sería comparable a la gestión de títulos en otras profesiones, tales como doctores en medicina y abogados.

3. Examen de la Escena del Accidente

La recogida de evidencias en el escenario de un accidente grave es una tarea que implica una gran responsabilidad, y por tanto requiere ser ejecutada por personal especialmente preparado. Normalmente no puede ser efectuada por agentes de policía ordinarios.

En general este examinador de la escena del accidente no necesita poseer una titulación académica, ya que la recogida de evidencias puede, con la formación adecuada, apoyarse en buena medida sobre una lista ya confeccionada de directrices y requerimientos.

En caso de accidente complejo, una reconstrucción (parcial) del accidente sobre el escenario podría, sin embargo, ayudar a la recogida de evidencias, por lo que se requeriría la asistencia de un reconstructor.

4. Titulación del Reconstructor de Accidentes

La reconstrucción de un accidente (como se ha definido anteriormente) requiere con frecuencia un profundo conocimiento de principios físicos y técnicos, los cuales generalmente sólo se pueden adquirir a través de estudios técnicos. Una titulación universitaria en ingeniería mecánica, física, o titulación comparable, es por tanto un requisito previo para llegar a ser reconstructor.

No obstante, un título universitario por sí solo no resulta suficiente para llevar a cabo este tipo de trabajo. Se requiere práctica específica y conocimiento teórico de la materia.

En lo relativo a la cualificación teórica, los estudios de postgrado son un posible enfoque, y serían preferibles al simple aprendizaje en el ejercicio profesional. Por otro lado, el conocimiento práctico sólo puede ser adquirido mediante la práctica profesional en campo, para lo cual se requiere no menos de 3 años. Además, los reconstrutores deberían tener al menos un conocimiento básico del sistema judicial del país en el que trabajan, que incluya los Códigos de procedimiento y las reglas de la actividad probatoria.

Los reconstrutores necesitan estar en posesión de, al menos, el permiso de conducción de la clase B. La posesión de permisos de conducción de la clase A y de las clases C1-C2 son recomendables. Poseer un permiso de conducción de una clase en particular no garantiza, en general, suficiente experiencia de conducción en esa clase. La experiencia de conducción es necesaria, sin embargo, para juzgar el comportamiento de un vehículo en particular y de su conductor.

5. Proceso de Certificación

Aquellas candidatos que deseen recibir certificación como reconstrutores deberían tener que pasar un examen, al objeto de probar su conocimiento como especialista en el campo de la reconstrucción de accidentes.
Tales exámenes deberían ser realizados por un limitado número de instituciones acreditadas. Resultaría esencial que la formación y el examen no fueran efectuados por una misma institución, si el resultado de los exámenes entrase en conflicto con intereses financieros.

La certificación de un reconstructor debería tener validez limitada por un período de tiempo, y debería ser renovada cada cinco años aproximadamente. La institución que llevó a cabo la certificación debería estar autorizada, en casos extremos, a retirarla. En tal caso, el reconstructor certificado debería estar obligado a complementar su formación, al objeto de permanecer certificado.

6. Conocimiento técnico en el campo de la Reconstrucción de Accidentes

El conocimiento especializado en el campo de la reconstrucción de accidentes debería incluir:
- Mecánica de colisiones
- Cálculos espacio-temporales
- Conocimiento básico del comportamiento de los vehículos en choques
- Aspectos técnicos de biomecánica lesional y de mecanismos de lesión
- Conocimiento básico de factores humanos
- Tecnología de vehículos, especialmente en lo referente a dirección y sistemas de frenado, así como dinámica vehicular
- Conocimiento básico de técnicas de simulación por ordenador
- Conocimiento básico de tecnologías de reparación y cálculo de costes de reparación
- Prueba técnica de fraude en seguros
- Fotografía digital y técnicas de imagen digital (corrección/manipulación de imágenes)
- Infraestructura viaria
- Conocimiento básico de criminalística e interpretación de evidencias
- Así como todo el conocimiento requerido para llevar a cabo el examen de la escena del accidente

7. Remuneración

La remuneración de los reconstructores, cuando sean contratados por los tribunales, debería ser adecuada, es decir, comparable a la que obtendrían en el mercado libre.

8. Reconstructores vs. Peritos Tasadores de Automóviles

En muchos países europeos la profesión de tasación de costes de reparación no está claramente diferenciada de la profesión de reconstrucción de accidentes. Esta situación se ve favorecida por denominaciones profesionales como “perito de automóviles”.

Mientras que la tasación del coste de la reparación se requiere una valoración a partir del “estado final” (el vehículo en su estado dañado), en la reconstrucción de accidentes es a menudo necesario determinar el proceso dinámico (por ejemplo la aproximación de los vehículos al punto de colisión). Además de todo el conocimiento adicional, procedente de campos diversos, que la práctica de la reconstrucción de accidentes requiere, esta aproximación dinámica es lo que la diferencia de otros campos de la pericia vehicular.

Así pues, un perito en tasación de costes de reparación no necesita poseer ningún conocimiento sobre reconstrucción de accidentes. Aunque un reconstructor de accidentes no necesita, en realidad, ningún conocimiento en la tasación de costes de reparación para reconstruir un accidente, podría ser útil que los reconstructores tuvieran un conocimiento básico de la tasación de costes de reparación, dado que en ocasiones puede surgir la necesidad de emitir opinión acerca de una tasación en particular.
**Swedish**

**Förslag till Europeiska riktliner inom olycksrekonstruktion:**

**Följande text är den korrekturlästa och uppdaterade versio- nen av de överenskommelser och ändringar som gjordes vid the 2nd QUERY Workshop, som hölls i Bratislava den 20 okto- ber 2005.**

1. **Olycksplatsundersökning vs. Olycksrekonstruktion**

Arbete med fordonsolyckor kan delas in i två grupper:
- olycksplatsundersökning, d.v.s insamling av bevis och data från olycksplatsen, inkluderat mätning (t.ex. inbromsning), icke varaktiga bevis och intervjuer.
- olycksrekonstruktion, d.v.s användandet av vetenskapliga metoder för att dra slutsatser från de insamla bevisen från olycksplatsen.

I de flesta Europeiska länder sker det första arbetet utav polisen, helst med speciell träning eller utbildning. Vi föreslår att en person med en sådan utbildning tituleras Olycksplatsinspektör.

Nästa steg i arbetet utförs utav en akademiskt kvalificerad person. Vi föreslår att denna typ av arbete kallas olycksrekonstruktion för att tydligt särskilja yrket från den först nämnda gruppen. Denna person tituleras Rekonstruktionist för att tydliggöra skillnaderna mellan denna och en Olycksplatsinspektör.

I fortsättningen skall då Rekonstruktionist eller jämförbar benämning i respektive språk användas för den som utför detta arbete (svenska: Olycksrekonstruktör?). Benämningar som ”teknisk expert” eller ”fordonsexpert” skall undvikas för att undkomma tveksamheter.

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I dessa länder finns ett system för insamling av data från olycksplats samt analys, den utförs av polismyndigheten. Lämplig utbildning och träning bör i så fall finnas för den personal som utför arbetet.

Om eller när en utredning blir för komplex eller om fysikaliska lager eller komplexa beräckningar används som den utredande polisen inte är van vid skall den hänvisas till en kvalificerad expert. Experten kan antingen finnas inom myndigheten eller vara en utomstående och han måste ha tillräcklig utbildning och erfarenhet. Det är viktigt att ha en balans mellan de med akademisk bakgrund och de som har nödvändiga praktiska erfarenheter.

2. **Skyddad titel för Rekonstruktionister**

I de flesta europeiska länder används oftast enbart en (geme- sam) teknisk expert i en rättegång. I några andra länder används två, en för var sida i målet. Vid de tillfällen då enbart en person används i rättssammanslag ställs det mycket höga krefter på hans/hennes kvalifikationer och moraliska integritet: Den rättsligaprocessen är baserad på de slutsatser som rekonstruktionisten har gjort vilket är svårt för jurister att se i detalj.

For att kunna garantera kvalifikation och moralisk integritet behöver en kvalitetskontroll över systemet etableras. Personer som har genomgått kvalitetskontrollen blir då certifierad, får en skyddad titel och kan få en bifogad skyddad stämpel eller försegling), vilket gör det lätt för jurister att tydliggöra skillnaderna mellan olycksfallsutredare och de självutnämnda experterna.

Detta system skulle kunna jämföras med det som finns för behandling av titlar inom andra yrkeskategorier såsom medicin och juridik.

3. **Olycksinsamlare**

Insamling av olycksdata från en svår olycka är en handling som kräver mycket ansvar och bör därför undersökas av personal utbildad inom området. Detta kan vanligtvis inte utföras av ordinarie trafikpoliser.

Generellt behöver inte en olycksplatsinspektör några akade- miska kvalifikationer. Eftersom insamlandet av bevis kan ske efter riktlinjer och protokoll bör en anpassad utbildning räcka för att få börja arbeta som insamlare.

Vi föreslår att vid de fall då en olycka är för komplex och en mindre rekonstruktion på plats kan vara till hjälp vid insamlandet av bevis kan en rekonstruktionist tillkallas för hjälp.

4. **Kvalifikationer för en Rekonstruktionist**

En olycksrekonstruktion (definierad ovan) kräver ofta en djupgående kunskap av fysiska och tekniska principer, vilket vanligtvis endast kan uppnås med tekniska studier. En universitetsexamen i maskinteknik eller fysik är därför en förutsättning för att bli en rekonstruktionist.

Enbart en universitetsexamen är dock inte tillräcklig för att bli certifierad. Det krävs djupare teoretisk och praktisk kunskap inom ämnets.

Angående den teoretiska kvalifikationen är ytterligare utbild- ning en väg att gå och är att föredra före praktik inom området. Praktisk kunskap är också nödvändig och kan endast inhämtas genom praktiskt arbete, därför bör minst 3 års praktik vara ett krav. En rekonstruktionist skall även ha praktisk erfarenhet av rättsliga sammanhang i det landet han/hon praktiserar i, vilket inkluderar dess rättssystem och bevisföringsregler.

En rekonstruktionist skall innehå en körkort av klass B eller högre. Innehav av körkortsklass A och C1-CE rekommenderas.

Innehav av denna klasser garanterar inte att föraren har nödvändig kunskap om att bedöma fordonsegenskaper och forarens normala beteenden.

5. **Kvalifikationsprocessen**

De kandidater som vill certifieras till rekonstruktionister måste bli godkända genom ett prov där de visat deras specialkritiskunskap inom olycksrekonstruktioner.

Sådana prov får endast ges av ett begränsat antal ackrediterade institutioner. Det är viktigt att utbildningen inte sker inom samma institution så att utgången av provet inte påverkas av financiella intressen.

Certifieringen av en rekonstruktionist skall vara tidsbegränsad och omprüvas ungefär var femte år. I vissa drastiska fall skall den ansvariga institutionen kunna dra tillbaka certifieringen. Vid ett sådant scenario skall den certifierade rekonstruktionisten tvingas att fortsätta sina studier för att få behålla certifieringen.

6. **Tekniska kunskaper inom ämnet olycksrekonstruktion**

Speciella kunskaper inom ämnet olycksrekonstruktion skall innehålla:
• Kollisionsmekanik
• Tid-avståndsberäkningar
• Baskunskaper inom krocksäkerhet
• Tekniska aspekter inom biomekanik och skademekanismer
• Baskunskaper inom beteendevetenskap
• Fordonsteknik, speciellt med avseende på styr- och bromssystem samt fordonsdynamik
• Baskunskaper i simulationsteknik
• Baskunskaper i reparationsteknik och reparationskostnader
• Teknisk bevisning av försäkringsbedrägeri
• Kunskaper inom digital fotografi och digital bildhantering
• Vägar och infrastruktur
• Baskunskap inom kriminologi och bevisfördelning
• Kunskaper inom olycksplatsundersökning

7. Ersättning

Ersättningen som en rekonstruktionist erhåller vid en rättegång skall vara adekvat, d v s samma som på den öppna marknaden.

8. Rekonstruktionist vs. expert inom skadekostnadsuppskattning

I de flesta europeiska länder är gränsdragningen mellan en rekonstruktionist och en skadereglerare väldigt otydlig. I dagsläget benämns dessa ”fordonsexperter”.

En skadereglerares bedömning krävs endast i slutfasen, medan en rekonstruktionist vanligtvis bestämmer den dynamiska processen. Bortsett från all den ytterligare kunskap som behövs för att bli rekonstruktionist är det den dynamiska processen som särställer dem från andra fordonsexperter.

En skadekostnadsuppskattare behöver inte någon kunskap i olycksrekonstruktion och en rekonstruktionist behöver inga kunskaper i att uppskatta skadekostnader på fordonet från olyckan. Det kan dock vara lämpligt att en rekonstruktionist har grundliga kunskaper i att uppskatta skadekostnader i enskilda fall.
First of all, we would like to thank all the partners of the QUERY project, as without their participation this research could not have been conducted.

Our thanks also go to the EVU Country Groups for their contribution to the project.

Further, we would like to express our thanks to Mr. Werber and Mrs. Lacroix from the DVR, the German Road Safety Council, who greatly helped us in getting the project off the ground.

We are grateful to Prof. Dr. von Glasner, President of the EVU, who agreed to moderate both QUERY workshops.

Many thanks go to both Dr. Köfalvi, chairman of Country Group Hungary, and Prof. Dr. Kasanicky, chairman of Country Group Slovakia, for the smooth running of the conferences in Budapest and Bratislava respectively.

We are also very grateful to Christof Arens, who translated the Country Reports in an amazingly short space of time.

Further, we would also like to express our thanks to Dr. Burg from the IbB for his advice. Also, we would like to thank the Institute of Traffic Accident Investigators (ITAI) in Great Britain for their cooperation.

Special thanks go to Dipl.-Ing. Hugemann, vice chairman of the EVU, who was very generous with his time and active support during the whole project. Many of the project’s ideas, including the Eurec email forum, were conceived by him.

Finally, we are most grateful to our sponsors, without whom the QUERY project would not have been realised. 50% of the project costs were financed with a subsidy from the Directorate-General for Energy and Transport of the EU (DG-TREN).
6. Appendices
Appendix I

Agenda QUERY Phase I Workshop

Budapest, 4. November 2004

WORKSHOP: ‘QUALIFICATION OF EUROPEAN RECONSTRUCTIONISTS’
QUERY - Phase 1 of the EU – Project
Developing Guidelines for a ‘Best Practice’ Qualification of Accident Analysts

9:00  Opening and presentation of the participants
9:30  Presentation of some countries I
   1. Introduction with a brief presentation of Germany
   2. Great Britain
   3. Norway as a representative of Scandinavia
10:30 Break
11:00 Presentation of some countries II
   4. Poland as one of the new EU countries
   5. Spain
   6. Netherlands
12:00 Break
12:15 Presentation of some countries III
   7. France
   8. Czech Republic
   9. Hungary
13:15 Lunch
14:30 Summary of abstracts – paper of thesis – next steps
15:15 Break
15:45 Final discussion of the thesis

Dipl.-Ing. Michael Weber, Chairman EVU and project director – Dipl.-Ing. Wolfgang Hugemann, Vice-Chairman
Prof. Dr. von Glasner, President of the EVU

List of Attendants – QUERY Phase I Workshop, Budapest

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<td>Pfleger (proxy: Ing. Mally)</td>
<td>Ernst</td>
<td>Prof. Dr.</td>
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Appendix II

Agenda QUERY Phase II Workshop

Bratislava, 20. October 2005

WORKSHOP: ‘QUALIFICATION OF EUROPEAN RECONSTRUCTIONISTS’
QUERY - Phase 2 of the EU – Project
Developing Guidelines for a ‘Best Practice’ Qualification of Accident Analysts

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:30</td>
<td>Opening and introduction of the new participants</td>
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<tr>
<td>9:00</td>
<td>Repetition: Basic theses of the project, schedule for the current day</td>
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<tr>
<td>9:30</td>
<td>First results from the Questionnaire</td>
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<td>10:00</td>
<td>Coffee Break</td>
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<td>10:30</td>
<td>Training on the job vs. academic studies</td>
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<td>11:15</td>
<td>Proposals for ‘best practice’ guidelines – Discussion</td>
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<td>12:00</td>
<td>Lunch</td>
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<td>13:15</td>
<td>Continuation of the discussion</td>
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<td>14:30</td>
<td>Coffee Break</td>
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<td>14:45</td>
<td>Continuation of the discussion</td>
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<td>16:15</td>
<td>Summary of the results</td>
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<td>16:30</td>
<td>End of the meeting</td>
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Dipl.-Ing. Michael Weber, Chairman EVU and project director – Dipl.-Ing. Wolfgang Hugemann, Vice-Chairman
Prof. Dr. von Glasner, President of the EVU

List of Attendance – QUERY Phase II Workshop, Bratislava

<table>
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<tr>
<th>last name</th>
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# Appendix III

## List of participant countries with country codes

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Appendix IV

Glossary / Definition of terms

- **accident analysis**: see -> accident reconstruction
- **accident analyst**: see -> accident reconstructionist
- **accident investigation**: used here as a general term to include all tasks carried out by experts in relation to road traffic accidents, regardless of the nature of and the qualifications for such a task.
- **accident reconstruction**: the forensic investigation into the causes of road traffic accidents, accomplished through the use of scientific methods for the purpose of drawing conclusions from the evidence gathered at the scene of an accident. Most frequently, these conclusions are made use of in the courts, be it in a criminal investigation or in civil litigation.
- **accident reconstructionist**: academically qualified person, usually with a degree in an engineering discipline, with further special training and working experience, who carries out -> accident reconstruction. Also referred to as accident analyst – the term reconstructionist was coined during the QUERY Project, and should, once standardised European qualification and certification methods are in place, be used to describe a person with -> certification in their field of expertise.
- **accident research**: the investigation into the unfolding of an accident for research purposes, with a view to increasing the general passive or active safety of vehicles. Such theoretical research is mainly carried out in the development departments of the automobile industry or at universities.
- **accident researcher**: person who carries out -> accident research
- **accident scene investigation**: the investigation carried out at the actual scene of an accident, i.e. the collection of evidence and data at the scene, including measurements (e.g. deceleration), preservation of ephemeral evidence, and interviewing of any persons either involved in the accident or witnesses of same.
- **accident scene investigator**: person with special training to carry out -> accident scene investigation, generally a police officer
- **accreditation**: see -> ISO accreditation
- **certificate**: in the English language system, a lower qualification than a -> diploma, granted by academic institutions which do not possess university status, such as -> Institutes of Technology or -> technical colleges, after 2 years of study or less.
- **certification**: a quality assurance method for experts. ~ ideally should encompass minimum qualification criteria, an examination of the candidate and of his/her moral integrity. It should be granted for a limited amount of time, after which it would need to be renewed. The authority which grants ~ should be a public one on at least a national basis. At present, only about 50% of the EU countries have some form of ~ available, and frequently this is only a basic form of -> registration with an individual court or the courts in general.
- **claims adjustor**: see -> expert for repair cost estimation. Here, the term independent ~ is used for independent experts, so as to distinguish these from experts who are employed in the insurance industry.
- **damage assessor**: see -> expert for repair cost estimation. Here, the term is used for experts employed in the insurance industry, so as to distinguish these from independent experts in this field.
- **degree**: academic qualification granted after a certain number of years’ study and the presentation of a thesis. The English language system distinguished between a Bachelor (4yrs) and a Masters (a further 1 to 2yrs) degree. The German equivalent to the Masters is the Diplom.
- **diploma**: in the English language system, a lower academic qualification than a -> degree, usually granted after 2 or 3 years of study.
- **expert in vehicle examination**: person who carries out the technical monitoring of vehicles, such as annual vehicle checks
- **expert for repair cost estimation**: person who carries out -> repair cost estimation, usually a mechanic or similar with specialist training in this field.
- **independent expert**: an expert hired by the court to present his independent findings in the case in question. Frequently also called joint expert, as he/she jointly serves both disputing parties.
Institute of Technology: academic institution without university status, which offers courses on technical and related subjects, and usually awards certificates and diplomas. The qualification awarded at such an institute can usually be counted towards a degree at another institution.

insurance assessor: term used at times to describe the damage assessor

ISO accreditation: a quality assurance method for experts. This accreditation is granted by private institutions, and is available to reconstructionists in some of the EU countries.

joint expert: see independent expert

list of experts: a list, or register, of experts available to a court. Should the court require the services of a particular type of expert, it needs to hire one from this list. For acceptance on such a list, see registration.

loss adjustor: see expert for repair cost estimation

panel of experts: see list of experts

private expert: expert hired by one of two litigant parties to back up this party’s position with his/her scientific findings. Sometimes also called expert witness.

reconstructionist: see accident reconstructionist

register of experts: see list of experts

registration: the registering of an expert’s name on a list of experts. This may be a list at an individual court, or one available to courts on a regional or national basis. Acceptance criteria, if defined at all, vary greatly between countries and regions.

repair cost estimation: the task of estimating the amount of money needed to repair a vehicle damaged in an accident, achieved by assessing the damage to the vehicle and determining the cost of its repair.

technical college: educational third level institution on a lower level than an academic one. Usually awards certificates. Can be compared to the German Berufsakademie.

University: academic institution entitled to award any kind of academic degree including a Ph.D. (Doctorate)

University of Applied Science: academic institution which limits itself to offering education only in scientific, technical and related subjects, and does so with a view to the practical application of that subject. Has university status for the subjects it teaches, and thus awards degrees. The German equivalent is the Fachhochschule.
Appendix ‘D’, Forensics for Collision Investigation and Reconstruction within the Police Service:

COLLISION INVESTIGATION AND RECONSTRUCTION

6. Validation of Evidence

6.1 It is imperative that any conclusion reached as the result of an investigation is supportable by evidence and in each of the following areas:

• scientific laws and principles have been correctly used within their proper context;
• any calculations used in reaching the conclusions are both valid and numerically correct.

6.2 As a minimum, all collision investigation evidence should be validated by one other collision investigator who is qualified to at least City and Guilds standard or equivalent approved qualification, who, where possible, is independent of the investigation, and who can certify that he or she has done so and is satisfied with that evidence.

6.3 The degree of validation required will depend upon the experience and expertise of the collision investigator and the complexity of the investigation.

6.4 Where an investigation is particularly complex, or it involves the application of physical laws or complex mathematics, which are beyond the experience of the investigator to explain and prove to the satisfaction of a court, the evidence must be validated by an appropriate expert (whether a police officer or otherwise) who has the necessary knowledge and experience. In such cases balance must be drawn between those who possess academic qualifications and those with essential practical experience. When selecting an appropriate individual for validation each case must be construed according to the prevailing circumstances and complexity.

6.5 Whilst independent scrutiny of individual investigations and quality assurance processes may be achieved by the use of independent experts to validate police findings, it should also be noted that the management of collision investigation within forces may be subject to independent review by Her Majesty’s Inspectorate of Constabulary and other audit and inspection bodies such as the Policing Standards Unit (Home Office).

Appendix V

Excerpt from the Road Death Investigation Manual
by the Association of Chief Police Officers, Great Britain, 2004
Appendix VI

Sample Questions for Certification Examination in Germany

SAMPLE OF A WRITTEN EXAMINATION
This is a sample of an examination which has to be passed to be certified as an official expert in Germany. The whole examination consists of three parts: jurisdiction, automotive technology and accident reconstruction, the latter consuming as much time as the other two together.

Total examination time: 3 hours, i.e. approx. 1.5 hours for the accident reconstruction part
Permitted tools: calculator

COLLISION MECHANICS
In the AZT repair costs crash test, a non-deformable barrier of 1000 kg mass impacts the rear end of a car with 15 km/h and 40% overlap. Let us first assume that the impact is plastic.
• What EES is produced when testing a light car (800 kg) and what EES when testing a heavy car (1600 kg)?
• How are these results affected if we do not assume plastic collision but a coefficient of restitution of 0.25?
• How are these results affected if we conduct the crash test with 100% overlap instead?

TACHOGRAPH CHART EVALUATION
The last driving manoeuvre recorded on a tachograph chart is a start-stop manoeuvre. Shortly before coming to a standstill, the HGV has impacted a pedestrian. Creeping drives (i.e. speeds below the recording threshold of the tachograph) can be excluded. The tachograph sheet is evaluated by an external firm (i.e. not by you), and as a result you obtain the following table:

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<tr>
<td>0 s</td>
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<tr>
<td>6 s</td>
<td>33 km/h</td>
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<tr>
<td>9 s</td>
<td>33 km/h</td>
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<tr>
<td>12 s</td>
<td>7 km/h</td>
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For clarification: the time points given in the table are absolute values, i.e. the total elapsed time, not the time between two nodes of the evaluation. Furthermore, the evaluation firm has restricted itself reasonably to what can actually be seen on the tachograph chart, i.e. speeds above 7 km/h. The extrapolation to full stop (as usually performed) has not been conducted. The temporal correctness of the evaluation is known to be ±0.5 seconds (absolute time) for each node. Tolerances affecting the speed are to be neglected in the following.
• What overall distance can be calculated from the above values? Please restrict your calculations to the evaluated section and do not extrapolate to standstill.

• Now take the temporal tolerances into account and calculate the minimum and the maximum driving distances.
You conduct experiments with the HGV involved in the accident. In these experiments the mean acceleration within the speed interval of 7 – 33 km/h is 1.0 m/s². Additionally, you undertake braking manoeuvres yielding a maximum acceleration of 5.5 m/s².
• How should you modify the tachograph chart evaluation so that it coincides with your measured results? (Do not ascribe it to the reading error: this remains as given above)
• What does this mean for the overall driving distance?

TIME-DISTANCE CONSIDERATIONS
In a criminal proceeding you have to give your opinion on a night-time pedestrian accident. There are continuous, straight skid marks in the middle of the lane that extend to the rest position of the passenger car. There is no unsteadiness marking the impact point. In regard to the damage pattern of the passenger car it is only known that glass of the right front headlamp is broken. The injury pattern of the pedestrian is not documented in the case file.

Looking from the position of the car driver, there is a box type van standing on the pavement next to the kerb, which has been recorded by the police. Witnesses reported that the pedestrian has crossed the road close to the box type van, but whether from the left to the right or from the right to the left is controversial.

If you look at the accident favouring the accused:
• What collision point do you choose, in front of or behind the box type van?
In connection with night-time pedestrian accidents, we often discuss prolonged reaction times. The accident location, however, is illuminated quite well. What reaction time should you choose to favour the accused?

Which assumption favours the accused driver: that the pedestrian came from the right or that he came from the left?

In a case file treating a possibly staged accident, you receive digital photographs showing the damage to one of the involved cars, transferred to you via e-mail. What possible methods do you have to check whether these photographs are authentic, i.e. whether they have not been manipulated afterwards?

PHOTOGRAFMETRY

The proof photographs taken during radar speed measurements have to be taken within a certain angle to the carriageway.

How do you check from the photograph whether this angle has been met?

You want to draw lines on the picture which are exactly perpendicular to the longitudinal axis of the carriageway. How do you construct these?

- The contact point is at the rear axle of the laterally impacted car.

We assume both EESs to be the same in all impact configurations:

Which impact configuration leads to the highest collision speed for the impacting car?

What is the ratio between the highest and lowest collision speed calculated in the above configurations?

(Please note that the radius of gyration is half of the wheelbase $i = 0.5 \, L$.)

COLLISION MECHANICS

A stationary passenger car (with the engine at the front) is impacted by another passenger car from the side. In regard to the cars involved only the damage to each is known. We now consider three possible impact configurations:

- The contact point is at the front axle of the laterally impacted car.

- The contact point is at the centre of gravity of the laterally impacted car.
Appendix VII

Questionnaire: Detailed Information on European Reconstructionists

1) Please state for which country you are answering this questionnaire:

2) Please give your name:

3) Please let us know your profession:

4) And please enter your area of specialisation:

5) In your country, are there any persons without an engineering degree or similar working in accident reconstruction?
   [ ] a Yes
   [ ] b No
   [ ] c Don't know

6) If you answered yes to the previous question, which qualification do these persons have instead?
   [ ] A former police officers with traffic accident experience
   [ ] B independent claims adjustors with training as mechanics or similar
   [ ] C damage assessors employed in the insurance industry
   [ ] D other (please name in the field below)

7) Does the law officially permit these persons to work as accident reconstructionists?
   [ ] a Yes
   [ ] b No
   [ ] c Don't know

8) Approximately what percentage of all reconstruction work is carried out by reconstructionists with an academic degree and further specialist training?
   ________ %

9) And how much by former police officers with traffic accident experience?
   ________ %

10) ...by independent claims adjustors trained as mechanics or similar, without further qualifications?
    ________ %

11) ...by damage assessors employed in the insurance industry?
    ________ %

12) ...and how much by groups you named under ‘other’ in question 6?
    ________ %

13) Can any of the above mentioned groups, other than the academically qualified one, obtain certification as a reconstructionist?
    [ ] a Yes, some or all of these groups
    [ ] b No, none of these groups
    [ ] c Don't know who can obtain certification
    [ ] d Certification is not available in my country

14) If you answered yes to the above question, please tell us which groups can obtain certification:
    [ ] A former police officers with traffic accident experience
    [ ] B independent claims adjustors with training as mechanics or similar
    [ ] C damage assessors employed in the insurance industry
    [ ] D other (please name)

15) In approximate percentages, how many of all certified reconstructionists come from these various groups? Please start with the percentage of academically qualified reconstructionists:
    ________ %

16) And how many certified reconstructionists come from the group of former police officers with traffic accident experience?
    ________ %

17) And how many from the group of independent claims adjustors?
    ________ %

18) How many from the group of damage assessors within the insurance industry?
    ________ %

19) And lastly, how many certified reconstructionists come from the groups you named under ‘other’ in question 6?
    ________ %

20) Which of these groups, other than the academically qualified reconstructionists, do reconstruction work for the courts?
    [ ] A former police officers
    [ ] B independent claims adjustors
    [ ] C damage assessors employed in the insurance industry
    [ ] D groups you named under ‘other’
21) Please tell us, in percentages, how much reconstruction work for the courts is carried out by each of these groups, starting again with the academically qualified reconstructionist:

_________ %

22) How much reconstruction work for the courts is carried out by former police officers with traffic accident experience?

_________ %

23) And how much by independent claims adjustors?

_________ %

24) How much by damage assessors employed in the insurance industry?

_________ %

25) And lastly, how much reconstruction work for the courts is carried out by any groups you named under ‘other’ in question 6?

_________ %

26) In principle, would you agree to a clear distinction to be set down between the academically qualified reconstructionist with further specialist training, and other professions working in the field of accident reconstruction?

[  ]a Yes
[  ]b No

27) How strongly do you agree with the following statement? ‘Accident reconstructionists must have a suitable academic qualification.’

disagree strongly   [  ]-2   [  ]-1   [  ]0   [  ]1   [  ]2     agree strongly

28) How strongly do you agree with this statement? ‘The terms ‘accident analyst’ and ‘reconstructionist’ (& their equivalents in other languages) should be reserved to describe the professional profile of persons with a suitable academic qualification.’

disagree strongly   [  ]-2   [  ]-1   [  ]0   [  ]1   [  ]2      agree strongly

29) If you would like to comment on your opinion, please do so here:

30) ‘To make the distinction between the professional profile of the ‘reconstructionist’ / ‘accident analyst’, and persons without a suitable academic qualification, the latter should be referred to as ‘accident investigators.’

disagree strongly   [  ]-2   [  ]-1   [  ]0   [  ]1   [  ]2      agree strongly

31) If you agree in principle to the above distinction, but are unhappy with the terms chosen to make this distinction, please make your own suggestions here. You may choose a term in your own language, with an approximate translation of same.

32) Staying with the definition of a reconstructionist as an academically taught person with further specialist training & expertise, which type of degree does a reconstructionist typically hold?

[  ]A mechanical engineering
[  ]B physics
[  ]C other (please name all)

33) In approximate percentages, how many academically qualified reconstructionists hold a degree in mechanical engineering?

_________ %

34) And how many hold a degree in physics?

_________ %

35) And how many hold other types of degrees?

_________ %

36) How many years does university education leading to such a suitable degree typically take?

_________ years on average

37) Which driving licenses must a reconstructionist possess?

[  ]A class A (motorbikes)
[  ]B class B (standard driver’s licence - cars)
[  ]C class C (trucks)
[  ]D class CE (heavy trucks / articulated lorries)
[  ]E class D (passenger transport)

38) In practice, is this requirement very strictly adhered to? i.e., does a reconstructionist usually have all the driver’s licenses which are officially required?

[  ]a Yes
[  ]b No

39) ‘Obtaining licenses in classes other than class B is expensive and time-consuming, while holding few benefits, due to the lack of driving experience with those larger vehicles. The class B license should therefore be considered sufficient.’

disagree strongly   [  ]-2   [  ]-1   [  ]0   [  ]1   [  ]2      agree strongly

40) Please feel free to comment on your opinion here:

41) Which system is used for the certification of reconstructionists? That is, who certifies the reconstructionist?

[  ]A individual courts (requiring separate certification/registration with other courts)
[  ]B a national public body / institution
[  ]C a private institution offering ISO accreditation
[  ]D a private institution offering another type of certification
[  ]E No certification is available in my country
[  ]F other (please describe below)
42) If no certification as such exists in your country, are there other ways in which a reconstructionist can 'certify' his expertise, e.g. through membership of a professional organisation or similar? If yes, please describe below:

43) If you mentioned professional organisations in your answer to the previous question, is membership with these automatic, or does the reconstructionist have to submit details to prove his expertise?
   [ ] a Anyone can become a member
   [ ] b When applying for membership, the person's expertise has to be proven
   [ ] c Other (please detail below)

44) To come back to all those countries where certification does exist: In order to obtain certification, does the reconstructionist have to pass an exam?
   [ ] a Yes
   [ ] b No

45) If yes, what does this examination consist of? Please list the various aspects.

46) How many people is the examining committee made up of?
   ________ persons

47) Which qualifications do these persons have? Please list the qualifications of all persons who deal with the examination.

48) Which additional expertise or training, if any, must a reconstructionist have to become certified?

49) Does the applicant have to take an oath?
   [ ] a Yes
   [ ] b No

50) Is the applicant's moral integrity assessed? (for example, by way of references from experts in the reconstruction or legal profession, police records, financial situation,...)
   [ ] a Yes
   [ ] b No

51) If so, in which way is it assessed?
   [ ] a Reference from experts in accident reconstruction
   [ ] b References from persons in the legal profession
   [ ] c Police records
   [ ] d Financial records
   [ ] e Other (please describe below)

52) Are you satisfied with the assessment of the reconstructionist's moral integrity? Should the moral integrity be more closely assessed or monitored than it currently is? Please give us your opinion below.

53) How many years' work experience must a reconstructionist have to become certified?
   ________ years

54) Does the certification remain valid for the expert's working life, or must it be renewed after a number of years?
   [ ] a Lifelong validity
   [ ] b Limited to a certain number of years

55) If the certification must be renewed after a certain number of years, please enter the number of years it remains valid:
   ________ years

56) Does the certified reconstructionist receive a stamp / seal or similar to document his certified status on official expert reports?
   [ ] a Yes
   [ ] b No

57) If he does obtain a stamp / seal or similar, please provide details here:

58) How satisfied are you with the certification system in your country?
   Very satisfied [ ] 2 [ ] 1 [ ] 0 [ ] 1 [ ] 2 Very dissatisfied

59) You may give reasons for your above answer here:

60) Would you prefer a change to a different system?
   [ ] a Yes
   [ ] b No

61) If yes, which system would you prefer?
   [ ] a Certification with an individual court
   [ ] b Certification through a national institution
   [ ] c ISO certification
   [ ] d Certification through a private institution (but not ISO)
   [ ] e Other (please explain below)

62) What effect has certification on the work a reconstructionist receives from private clients?

63) What effect has certification on the work a reconstructionist receives from the courts?

64) How does certification affect the reconstructionist's status at the court when he appears there as an independent / joint expert?

65) How does certification affect the reconstructionist's status at the court when he appears there as a private expert hired by one of the litigant parties?

66) If an ISO 9000 compatible standard (international standard for quality management) exists separately to public certification, approximately how many reconstructionists obtain ISO accreditation in addition to their 'traditional' certification?
   ________ %
67) Is the ISO standard and its accreditation monitored (for example, by an independent authority)?
[ ] a yes
[ ] b no
[ ] c don't know

68) If yes, how is it monitored?

69) What are the approximate costs involved in obtaining ISO accreditation?

70) How long has an ISO accreditation for reconstructionists been available in your country?

71) If you have comments on ISO accreditation, you may make these here:

72) When hired by the court, is the remuneration an expert receives fixed by law?
[ ] a yes
[ ] b no

73) What is the hourly rate of pay a court-hired reconstructionist receives?

74) What is the approximate hourly rate a privately hired reconstructionist receives?

75) If a set fee is paid to the reconstructionist for a completed report, what is the approximate amount per report, if the expert is hired by the court? (please give an approximate average)

76) Is the remuneration an expert receives for a completed report also fixed by law?
[ ] a yes
[ ] b no

77) What is the approximate amount received per report, when the report is for a private client? (again, please give an approximate average)

78) Are there any reconstructionists employed by the State or any public institutions?
[ ] a yes
[ ] b no

79) What is the approximate annual salary of a reconstructionist employed by the state?

80) Are there any reconstructionists employed by private companies or institutions who specialise in reconstruction work?
[ ] a yes
[ ] b no

81) What is their approximate annual salary? Again, please give an average.

82) Are there any reconstructionists employed by insurance companies?
[ ] a yes
[ ] b no

83) What is their approximate annual salary?

84) Could you please give us an idea how much the hourly rate of pay of a medical doctor, working as a general practitioner in his own practice, is?

85) And could you give us an idea how much the hourly rate of pay of a lawyer is?

86) We would like to know approximately what percentage of reconstructionists work in these various forms of employment above. Again, please give us an approximate percentage, starting with self-employed reconstructionists:

87) Approximately what percentage of reconstructionists is employed by the State?

88) And approximately what percentage is employed in reconstruction firms?

89) Lastly, what percentage of reconstructionists is employed in other, related, industries, such as insurance companies?

90) Can a reconstructionist be called to the scene of an accident?
[ ] a yes
[ ] b no

91) If so, by whom?
[ ] a the prosecutor
[ ] b the police
[ ] c other (please detail below)

92) How frequently does this occur? Please give an approximate percentage out of the total number of road traffic accidents which result in the police being called to the scene.

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93) How frequently do the authorities call an expert to the scene of a severe accident (causing death or serious injury)? Again please give a percentage out of the number of all such severe accidents.

_________ %

94) In which cases would an expert be regularly called to the scene?

[A] in the event of death or serious injury
[B] when fault cannot be determined (i.e. when it is unclear how an accident occurred)
[C] in case of alleged technical fault of a vehicle involved in an accident
[D] to determine which of several occupants had been driving the vehicle
[E] other (please detail below)

95) In penal, or criminal, cases, who is the expert hired by?

[a] by the court as a joint expert
[b] by the two litigant parties as a (mutually agreed upon) joint expert
[c] by one of the litigant parties (prosecutor/defendant) as one of two expert witnesses
[d] more than one of the above options is possible (please detail which combination of a, b or c)

96) If more than one of the above possibilities exists, how frequently is the expert hired to function as a joint expert? Again, please indicate an approximate percentage.

_________ % of all penal/criminal cases

97) And how frequently is the reconstructionist hired to function as a joint expert in civil cases? Again, please indicate an approximate percentage.

_________ % of all civil cases

98) In case of a privately hired expert, can any findings in his report be kept confidential?

[a] No
[b] Yes, but only if no part of the expert’s report is disclosed (i.e., if the report is disclosed, it must be disclosed in full)
[c] Yes, in the following situation: (please describe below)

99) In a penal/criminal case, does the reconstructionist have to appear in court as an expert witness?

[a] Yes, he must always appear in court to present his findings
[b] No, a written report is sufficient
[c] Generally not, but he may be asked to orally answer questions on his written report

100) In a civil case, does the expert have to appear before the court?

[a] No, report is issued in written form only
[b] Yes, report is first issued in written form, expert must appear before the court later
[c] Report issued first in written form, but expert may be requested to appear in court later

101) In a penal/criminal case, does the expert have to be under oath?

[a] Yes
[b] Yes, but as he already took an oath upon certification, he may refer back to this oath
[c] Generally not, unless requested by one of the litigant parties
[d] No
[e] other (please detail below)

102) In a civil case, does the expert have to be under oath?

[a] Yes
[b] Yes, but as he already took an oath upon certification, he may refer back to this oath
[c] Generally not, unless requested by one of the litigant parties
[d] No
[e] other (please detail below)

103) In which situations are experts hired by the court?

[A] generally, no experts are consulted
[B] if the judge considers an expert’s opinion necessary
[C] if one of the two litigant parties requests an expert’s opinion
[D] if a third expert is required in the case of diverging opinions of two private experts
[E] other (please detail below)

104) Is the opinion of a joint expert valued higher than that of a private one? Please indicate on the scale how frequently or strongly this is the case.

no, joint expert’s opinion never valued higher
[ ]-2  [ ]-1  [ ]0  [ ]1  [ ]2  yes, joint expert’s opinion always valued higher

105) In your opinion, how is the judge meant to act when private and joint experts’ opinions diverge?

[a] disregard the private expert’s opinion in favour of the joint expert’s one
[b] hire a third expert
[c] favour the private expert’s opinion, if his arguments are obviously the stronger ones
[d] other (please outline below)

106) In the legal system in your country...

[a] is a reconstructionist hired to function as a joint expert in a court case?
[b] is he hired as one of two expert witnesses?
[c] or, are both the above options possible?

107) If the legal system uses a joint expert...

[a] … do the litigant parties agree on an expert to be chosen?
[b] … or does the judge have the sole decision on who to hire as an expert?
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108) If it is the judge who makes this decision, how can a party veto the judge's choice?
[A] The party does not have to give any reasons for the veto
[B] The party does not have to give any reasons, provided the opposing party also vetoes the judge's choice
[C] The party has to prove the expert to be unsuitable for the case in question (e.g. bias, lack of specialist knowledge, ...)
[D] The party cannot veto the judge's choice unless the opposing party also vetoes it
[E] None of the above – the judge's choice cannot be vetoed
[F] Other (please describe below)

109) Which of these two legal systems do you consider more just / better?
[a] One joint expert
[b] Two independent experts, one for each party
[c] Both options should be available in a legal system

110) Please give reasons for your above opinion. If you prefer the system which uses one joint expert, is this because ...
[A] More just because the joint expert is impartial / unbiased
[B] More just because joint expert system insures the judgment is based on fact, and not on how convincing one of two experts appears in court
[C] Better / cheaper, as there is less cost for the litigant parties, seeing as only one expert must be paid
[D] Better / cheaper, as there is less cost for the litigant parties, seeing as the expert needs to deal only with the facts at hand, and not with having to appear more convincing than the opposing party's expert
[E] Better for different reasons (please detail below)

111) If you prefer the system which uses two independent experts competing against each other, is this because ...
[A] More just because the lack of 'quality control' if one singular expert is used – possible errors may remain undetected
[B] More just because each party's own position is properly backed up with his or her own expert's scientific findings
[C] Better for different reasons, which are detailed below:

112) If you prefer the availability of both systems, please give us your reasons for this:

113) In your country, how easy is it in general to initiate a lawsuit?
[ ] Very difficult [ ] 2 [ ] 1 [ ] 0 [ ] 1 [ ] 2 Very easy

114) Approximately what percentage of all road traffic accidents result in civil litigation?
[ ] % of all road traffic accidents

115) Is there insurance available which covers the cost of litigation?
[A] Yes
[B] No

116) If you answered yes to the previous question, approximately how many percent of the population are covered by such insurance?
[ ] % of the population approximately

117) Are there solicitors / lawyers in your country who work on a 'no win no fee' basis?
[A] Yes
[B] No

118) If you answered yes to the previous question, is this a commonly used system? Please give an approximate percentage of court cases in which the lawyer works on a 'no win no fee' basis:
[ ] % of all court cases

119) How is the insurance industry organised - who does an injured party deal with in a damages claim?
[A] The injured party deals directly with the opposing party's insurance company
[B] The injured party must go through his own insurance company for a damages claim from a third party's insurance
[C] Other (please explain below)

120) Is there any other relevant information regarding the legal system in your country which should be taken into account?

121) Which of the following fall into the working areas of a reconstructionist?
[A] Determining causes of vehicular accidents; collision mechanisms
[B] Calculation of a vehicle's speed at the time of an accident
[C] Technical checks on vehicles involved in accidents to determine possible technical faults, incl. defective tyres
[D] Technical checks on vehicles in general (not in relation to an accident)
[E] Biomechanical loading during impact (whiplash)
[F] Identification of the driver (questions about who was the driver)
[G] Gathering evidence at the scene of an accident
[H] Insecure loads (as causes of accidents)
[I] Defective automatic traffic control devices (as causes of accidents)
[J] Technical proof of insurance fraud
[K] Nullification of sale because of (alleged) technical deficiencies
[L] Damage calculation / calculation of repair costs
[M] Other (please list below)

122) Are there any professions other than that of a reconstructionist who also work in these same areas? Please tick all types of work which are also carried out by other professions.
[A] Determining causes of vehicular accidents; collision mechanisms
[B] Calculation of a vehicle's speed at the time of an accident
A P P E N D I C E S

123) Please name the professions which also carry out the jobs you ticked in the last question.

124) Do reconstructionists in your country make use of the following resources?

125) If reconstructionists in your country do not make use of EVU/AREC/other international conferences or seminars as a resource, is this for any of the following reasons?

126) If they don't make use of academic theses and similar, is this for any of the following reasons?

127) If they don't make use of seminars on accident simulation programs as a resource, is this for any of the following reasons?

128) If they don't make use of specialist journals and similar, is this for any of the following reasons?

129) And if reconstructionists in your country do not make use of internet/email forums, is this for any of the following reasons?

130) Which other resources, not mentioned above, do reconstructionists in your country make use of?

131) If a bilingual (English/German) European reconstruction journal existed, how likely would you be to subscribe to it?

I would definitely subscribe to such a journal

132) How many reconstructionists in your country would you consider likely to subscribe to such a journal? Please give an approximate, estimated number.

133) If reconstructionists in your country exchange information with, or draw resources from, other countries, please list these countries in order of importance (starting with the most important one):

134) Which possibilities are available in your own country to reconstructionists who wish to receive further/ongoing training?

135) Are there currently changes planned, or being undertaken, in your country, as far as the professional profile of reconstructionists is concerned? If so, please give a brief summary below.

136) Thank you for taking the time to answer this questionnaire! Here we have provided space for you to add any comments and remarks you may have on any part of this questionnaire:
Appendix VIII

STATUTE of the EVU
European Association for Accident Research and Analysis

1. Name and Registered Office

The association shall carry the name 'EVU, European Association for Accident Research and Analysis', hereinafter referred to as the Association. As an officially registered association (AG Wiesbaden 24 VR 2768), it has its registered offices in Wiesbaden, Germany. Its headquarters are at

Oberaltenallee 16
22081 Hamburg
Germany

tel. +49 (0)40-63 60 99 88
fax +49 (0)40-63 66 99 86

The EVU shall function as the umbrella association for the country groups affiliated to it.

2. Aims and Objectives

2.1 The Association shall serve the purpose of promoting improvement of the basic principles and the methodology of accident analysis, in order to contribute to increased legal security, including in the areas of maintenance and technical evaluation of vehicles. This can be effected by embracing, amongst others, the pertinent European norms regarding accreditation and certification. Within the realm of its possibilities, the Association shall promote road traffic safety, by way of compiling information and developing concepts which shall publicly be made available.

2.2 The Association shall carry out its own research, and/or participate in suitable research projects. The results shall primarily be made available to its members. However it shall also inform the public of its findings by way of publications and congresses.

2.3 Members appointed by the Association shall sit on international expert panels, with the objective of contributing the Association's expertise. The Association shall foster international co-operation for the further development of science and research in the field of road traffic safety and accident research. The Association shall also commit itself to the harmonisation of training and appointment of experts.

2.4 The Association shall have the following duties, rights and obligations: keeping and publishing a list of its members; publishing official technical documentation; reviewing and adopting technical documentation developed by the country groups or expert committees; establishing an online service for the distribution of technical information; collaborating with authorising and certifying bodies; dealing with the main concerns of the profession and representing these on the relevant panels; organising and holding the Association's annual general meeting; awarding the rights to hold the EVU annual conference; appointing and supervising expert committees; reviewing and recommending basic and further training courses & activities; carrying out publicity work for the Association; sanctioning the rules of the EVU Country Groups.

3. Structure of the Association

3.1 The affiliated Country Groups shall implement the Association's aims and objectives on a national level. There shall be only one Country Group for each country.

3.2 The rules of the respective Country Groups are to be sanctioned by the Association.

3.3 So far, Country Groups have been established for Germany, Austria, Switzerland, Slovakia, Slovenia, the Czech Republic and Hungary.

3.4 The chairperson of the Board of each Country Group shall automatically become a member of the Board of Directors of the Association.

4. Conditions of Membership Admission

4.1 Natural and legal persons may become members of the Association. Where a Country Group has already been established, a member shall be admitted to the Association only by joining the respective Country Group. A Country Group as a legal person, however, may not be admitted to the Association.

4.2 Membership shall be applied for in writing. It is initially decided on by the Board of the respective Country Group, and subsequently by the Board of Directors of the Association. Members from countries in which no country group has been established yet are to apply directly to the Board of Directors of the Association. The Board may refuse the consideration of an application for membership without being bound to give any reasons.

4.3 Members can be either:

a) Ordinary members:
   - Generally, natural and legal persons who actively work in the fields in which the Association is active may become ordinary members.

b) Sustaining members:
   - Natural and legal persons who are interested in symbolically, morally and financially lending support to the aims and objectives of the Association may become sustaining members.
c) Honorary members:
   Individuals who have made valuable contributions to the Association may be appointed honorary members. Honorary members enjoy the same rights as ordinary members, and do not pay annual fees.

   The appointment of honorary members shall take place at the proposal of the Presidential Council or the Board of Directors. Such proposal is to be made to the Presidential Council at least 4 weeks prior to the AGM, for inclusion in the order of business. Honorary members shall be appointed by the Presidential Council.

5. Termination of Membership

5.1 Membership of the Association shall cease to exist upon a member’s written resignation, by expulsion, suspension, or death.

5.2 Any member wishing to resign his or her membership from the Association must give notice in writing at least six weeks prior to the end of the current year. This must be addressed to the relevant Country Group, or, where no country group exists, to the Board of the Association.

5.3 Any member may be removed from the membership for grossly infringing upon the interests of the Association. Such misconduct shall be particularly considered in cases where a member’s conduct casts doubts upon his or her professional qualifications, or is in any other way capable of damaging the Association’s members, or the reputation of the profession represented by it.

   An expulsion shall be decided upon by the Board by a two-thirds majority, at a board meeting with the requisite quorum present. Reasons for the decision are to be given in writing to the member by way of a registered letter.

5.4 A member whose membership fee remains unpaid despite at least two reminders may be temporarily suspended from the Association. The suspension shall only take effect if the arrears have not been paid within three months of the second reminder having been sent. The member is to be informed of his or her suspension.

5.5 Members who terminate their membership, or have their membership terminated, shall in no way be entitled to any part of the Association’s funds.

6. Accounting Year

6.1 The Association’s accounting year shall be the calendar year.

6.2 The accounts of the preceding year are to be audited by two auditors, who shall be elected, for the term of one year, at the AGM.

7. Membership Fees

7.1 The amounts of membership fees and subscriptions charged are set down in the bye-laws of the Association. These bye-laws shall be enacted and amended by the Board, and are to be approved of by the General Assembly.

   Membership fees shall be paid annually via the Country Groups. By 31 January each year, each Country Group shall update the Association on its membership numbers for the preceding year, as well as forward the corresponding fees due. The Country Groups are at liberty to charge additional fees to their respective members, the amount of which shall remain with the Country Groups for the carrying out of their duties and responsibilities.

   Members not belonging to any Country Group shall be invoiced directly by the Association.

7.2 Members are at liberty to make further voluntary contributions or donations.

7.3 Fees for the provision of any incidental services may be determined by the Board upon authorisation by the Presidential Council.

7.4 In special circumstances, the Board is at liberty to waive a member’s fees and subscriptions in part or in full.

7.5 Honorary members do not pay a membership fee.

8. Organs of the Association

Organs of the Association shall be the Board of Directors, the Presidential Council and the General Assembly.

9. The Board of Directors

9.1 The Board shall comprise the Chairman, the Vice Chairman, the Treasurer and the Secretary on the one hand (Executive Committee), and the chairpersons of the Country Groups on the other.

9.2 Judicially and extrajudicially, the Association shall be represented by the Chairman, or jointly by two other members of the Executive, by virtue of special authorisation by the Chairman.

9.3 The Board shall be in charge of the affairs of the Association, unless they are, as per the statute, assigned to another organ of the Association.

   The Board’s functions are in particular:
   a) preparation, convocation and organisation of the Annual General Meeting
   b) implementation of resolutions passed at the AGM
   c) preparation of a budget, accounting statements and an annual report for each accounting year
   d) making and terminating employment contracts
   e) decisions on membership admission and expulsion
   f) authorisation of the individual Country Groups’ rules

   On important matters, the Board shall consult the Presidential Council.

9.4 The appointment or the recall of the Executive Committee takes place at the AGM, following nomination by the Presidential Council.

   Persons elected to serve on the Executive Committee must be members of the Association.

   The Chairman’s and the Vice Chairman’s term of office shall be six years, the term of office of the other two members of
the Executive Committee three years, with each member of the Executive remaining in office until new elections have been held. The term of office of the other members of the Board, who also chair the respective Country Groups, shall correspond to their term of office in their Country Group.

In the event of a member of the Executive Committee retiring before their term of office ends, the Board of Directors shall elect a substitute to serve as acting member of the Executive until such time as the General Assembly meets.

9.5 The Board of Directors shall meet at least once a year, this meeting usually coinciding with the AGM. In addition, the Executive Committee shall meet at least once more per year. The meetings shall be convened and chaired by the Chairman, or, in case of being prevented for any reason, by his deputy. Notice of a meeting shall be given no less than one month in advance.

The Board of Directors shall have a quorum if at least half of its members are present. The Executive Committee shall have a quorum if at least three of its members are present. To pass a resolution, a simple majority is required. In the event of a tie, the Chairman - or, in his absence, his deputy - shall have the casting vote. Minutes are to be kept on all resolutions passed by the Board or the Executive.

The Board or the Executive may pass a resolution in written form, provided all its members are in agreement on the resolution concerned.

10. The Presidential Council

10.1 The Presidential Council shall comprise particularly prominent personalities from the realms of academia, politics, administration and industry, and shall consist of no less than three and generally no more than eleven members.

Election to the Presidential Council shall take place at the Annual General Meeting upon nomination by the Board of Directors. The term of office shall be five years, and shall not end until a new election takes effect. Re-election and co-option are permitted at all times.

10.2 The Presidential Council shall advise the Board on important Association matters, as well as with regard to maintaining the essential goals of the Association.

10.3 The Presidential Council shall elect a President and several Vice Presidents from its midst. The President, or one of the Vice Presidents in his stead, shall chair the Presidential Council.

10.4 In the event of a member of the Presidential Council being a legal person, or having been appointed on account of his official position, his term of office shall expire when the preconditions of his appointment cease to apply.

10.5 The Presidential Council shall be convened by the Chairman in writing. Notice of a meeting shall be given no less than one month in advance. On request by either the President, half of the President’s Council’s members, or half of the Board members, the Chairman shall have to convene the Presidential Council.

10.6 The Presidential Council shall have a quorum if more than half of its duly convened ordinary members are present. In the event of a tie, the President shall have the casting vote.

10.7 Minutes are to be kept on all resolutions passed by the Presidential Council.

10.8 In special cases in the interest of the Association, the Presidential Council elected at the AGM may be augmented by other, Associate, members, such as representatives from regulatory authorities, academics and others. This is effected through nomination by the Board of Directors or the Presidential Council itself.

10.9 Upon application, members of the Presidential Council as well as the Executive Committee may have their expenses reimbursed.

11. General Assembly

11.1 The General Assembly shall meet once a year at the Annual General Meeting, which shall be convened by the Chairman or his deputy. Notice of a meeting shall be given in writing no less than four weeks in advance, and shall include the order of business.

11.2 An extraordinary general meeting shall be convened upon the request of a minimum of one third of the Association’s members.

11.3 The functions of the General Assembly are in particular:
- election of the Executive Committee
- election of the Presidential Council
- election of two auditors
- adoption of the Presidential Council’s report
- adoption of the annual report, and exoneration of the Board
- passing resolutions on changes to bye-laws or the statute, and on the dissolution of the Association
- fixing the amount of the annual membership fee

11.4 At the General Assembly, each natural person as a member shall have a vote. The voting right may be exercised directly, or by proxy. As proxy agent, an ordinary member shall be appointed, in writing, for the duration of one meeting of the Assembly only. The Board is to be notified in writing of the appointment of proxy at least two weeks prior to the meeting of the General Assembly. As the vote by proxy shall remain an exception, the number of permitted proxy votes shall be limited to twenty per each meeting. Eligibility for a proxy vote shall be determined on a first come first serve basis by the time of receipt of the written notice of appointment by the Board.

11.5 The Chairman of the meeting shall determine the voting system used. Upon request of at least one third of the members present, voting shall be by secret ballot.

11.6 The General Assembly shall pass resolutions by a simple majority. Any meeting of the General Assembly shall have a quorum regardless of the number of members present.
11.7 Resolutions on the changing of the aims and objectives of the Association, or on its dissolution, shall require a majority of three quarters of its members to be passed.

11.8 Minutes are to be kept by the Secretary on the meeting of the General Assembly and any resolutions passed in its course, and are to be signed by the Chairman of the assembly meeting.

12. Dissolution

12.1 The dissolution of the Association can be effected by a resolution of the General Assembly. A liquidator is to be appointed in this case.

12.2 Following the resolution to dissolve the Association, liquidation is to be carried out according to the regulations of the German Civil Code (BGB).

12.3 The Association's remaining funds shall fall to its members in equal parts.
The European Association for Accident Research and Analysis (EVU), in a two-year project, established a European-wide accident reconstructionist network, and investigated how the professional profile of specialists in accident reconstruction is integrated into the different legal systems. The primary results of the QUERY project are summarised in a proposal for eight guidelines on a harmonised profile of accident analysts in Europe.