UNITED KINGDOM - STATUS REPORT

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INTRODUCTION

I am pleased to be here today to present the United Kingdom's Status Report at this ESV.

My intention is to highlight some current topics of interest; some are existing issues, some new and others are mentioned to emphasise our long term interests. This will only partially reflect the wide range of activities where the UK seeks to advance vehicle safety. I will also touch on some themes and issues which are threaded through our work. Topics covered will include research, the importance of collaboration, consumer information, standards, impact assessment & evidence based approaches, large vehicles, secondary safety, primary safety plus advanced systems. At the core of activity by the UK Department for Transport (DfT) are the national casualty reduction targets.

UK ROAD SAFETY TARGETS, PROGRESS AND NEXT STEPS

Great Britain Road Safety Targets

The following outlines the targets, our progress to date and some further steps being taken as the end date for the current targets (2010) approaches.

The Targets: These were set out in March 2000 in the Government's road safety strategy, "Tomorrow's Roads: Safer for Everyone". This set new targets for casualty reduction by 2010 compared with a baseline of the average of casualties for 1994 to 1998 for Great Britain. The targets are

- 40% for all road deaths and serious injuries
- 50% for child (0-15 years) road deaths and serious injuries
- 10% for the rate (by vehicle kilometres) of slight injuries

Progress: These three targets were considered challenging but achievable. So what progress has been made and, in particular, are we on course to achieve them? Progress has been assessed at three yearly reviews and the second review, covering casualty statistics to the end of 2005, was published in February 2007. This highlighted.

Overall KSI: We are on target for killed and seriously injured (KSI) overall with 2005 figures showing a reduction of 33%. (Over the same period traffic had grown by 13 %.). If this trend continued, it would indicate a fall to 43.5% or, if new measures prove effective, 45.5% i.e. in excess of the 40% KSI target for 2010.

The gain (to 2005) depends on the road user class. For most classes (pedestrians, pedal cyclists and car users) the gains are similar with falls in KSI in the 37 -39% region. On the other hand motorcyclist KSI casualties showed an increase between 1999 and 2003, reflecting a substantial growth in the popularity of motorcycling. The raised casualty level had dropped back in 2005 to 1% above the baseline.

Children KSI had fallen to about 49% of the baseline in 2005 and, if continued, this would give a reduction of 60% by 2010 compared to the 50% target. The 2005 figures reflected gains in all areas with casualties falling for child pedestrians (49%), child cyclists (53%) and child car passengers (54%).

Slight Casualty Rate: This was well in advance of the target rate (10%) with a fall of 23% in 2005.

However, despite the good progress on KSI, there has been a divergence between deaths and KSIs. Deaths are down by 11% in 2005 and, if the trend persisted and no new measures were introduced, the number of deaths would be 19% less by 2010.

Steps from now to End of Existing Targets: Some of the momentum in improving benefits will continue as ongoing and expected measures take fuller effect. However we are implementing further improvements that can have an immediate effect in the remaining three year period to 2010, particularly in areas which would further reduce the number of deaths, an area where progress has been slow. The approach is to develop a co-ordinated approach of greater police enforcement and targeted publicity campaigns.

Next Steps – Strategy for Targets beyond 2010: In parallel with implementing and delivering actions and activities to support the current targets, we now need to develop a strategy for beyond 2010. We hope to engage with an even wider group of stakeholders. The review process will involve

engagement with key partners early on followed by public consultation. Potential areas include the likely contribution of technology over the next ten years, the effect of societal changes and the impacts of interventions to improve behaviour.

RESEARCH

Some of the research in specific areas is covered in later sections. This section covers the fundamental area of accident investigation which is frequently drawn on in specific projects. The UK programmes are well known.

The On the Spot (OTS) accident research project studies the influence on accident causation and injury mechanisms of human involvement, vehicle design and highway design. It also allows enhanced reconstruction and analysis of accidents for specific projects.

The Heavy Vehicle Crash Injury Study (HVCIS) covers truck, bus, coach, minibus and agricultural vehicles and light vans. The study draws on a range of sources.

The Co-operative Crash Injury Study (CCIS) remains Europe's largest in-depth study. It provides information on injury causation, the crashworthiness of vehicles, the effectiveness of occupant protection measures plus biomechanical information. An emphasis in the current phase is to regularly identify possible safety gains.

EVIDENCE BASED DECISIONS PLUS COLLABORATION

While fully recognising the importance of research, it is not an end in itself. A key role is providing evidence to support the development of policy, standards and other activities leading to improvements in vehicle safety. Resources, whether those of the public, industry or government are finite so it is vital that decisions on new measures use these resources to best effect.

Impact Assessments

For the UK an important and long established element in the process leading up to legislation and policy decisions has been an impact assessment. Typically a regulatory impact assessment (RIA) examines a range of options; associated factors including costs, benefits and implications (positive and negative) for those affected are identified and set out.

Many other authorities take a similar approach and we particularly welcome the increasing extent and depth to which this approach is reflected in European decision taking on safety improvements in vehicles. However, even in Europe, the precise position e.g. size of benefits and costs, and individual judgements, can vary from country to country. This is one of the reasons why it is important to allow sufficient time for individual countries to properly review proposals for standards and updates in the international decision taking process.

Impact assessments and proportionate responses are also relevant for consumer information requirements. This is expanded on later.

Collaboration, Partnerships and Delivering Results

We place great emphasis on collaboration and working flexibly with a variety of long term partnerships, national and international, in formal or looser arrangements. Many are outside government ranging from industry to motoring organisations.

The UK devotes considerable resources to international vehicle safety research. While there are many advantages of such collaboration, including combining resources, it is still an expensive national commitment. But the cost of vehicle safety research is small in comparison with the overall size of the sector it affects; the core manufacturing, distribution and servicing business in the UK directly generate a turnover value of £200 billion.

It is vital that such research is effective in terms of delivering better safety measures. There have been many successes over the years but some setbacks where research has not achieved the expected outcome, an agreement proved elusive or a step forward took longer than preferable. In long term areas, intermediate usable outputs would be valuable. Delays could mean a lost generation of casualties that can never be recovered.

In practice, we prioritise where to concentrate our research efforts. This applies similar disciplines in concentrating our resources where standards are discussed and developed. In these fora, Success depends on open communication, good research inputs and a high level of responsibility in taking proportionate and transparent decisions.

Collaboration post IHRA

There is still a period of readjustment or repositioning in the post IHRA landscape. The UK sees societal benefits in wider co-operation and is keen to nurture a new collaborative arrangement. To gain the widest involvement, this should have the potential to allow others to co-operate in a structured but unregimented way. The European Enhanced Vehicle Committee (EEVC) has endured for 30 years in Europe so it is worth looking and learning from this approach when considering the best model for global collaboration.

WORKING TOWARDS IMPROVED SAFETY

This is an area where the traditional boundaries, whether administrative or technical systems, are changing and becoming less distinct.

Consumer Information – a Powerful Mechanism

The advantages of consumer information include rewarding advances and efforts by manufacturers beyond legislative requirements and flexibility compared to regulations. The societal benefit of the resulting product improvements is increased safety for all including those who are oblivious to consumer ratings.

Consumer information is a powerful mechanism and it is important to be proportionate and transparent. Manufacturers naturally concentrate on achieving a good result and the steps chosen for an individual product will depend on a variety of design, practical and cost factors. The resulting score should ideally offer a tolerable reflection of the size of the associated safety benefit. In this way the maximum safety benefit is delivered for the cost of the steps taken by the manufacturer. This is a considerable simplification and such a degree of refinement may be only partially feasible. However cost is a relevant factor, even though it may not be used in exactly the same way as in a regulatory environment.

Consumer information can potentially be expanded into areas beyond Euro NCAP and the UK research effort on motorcycle helmets and child restraints is covered later. For the UK, one of the most important factors in moving forward to implement a scheme is a well researched test procedure and assessment protocol.

Euro NCAP

Euro NCAP has had a very significant effect. Manufacturers deserve credit for their response; this is evident in terms of occupant protection where 4 or 5 star is now the norm for adult occupant rating, and 3 or 4 star for the child rating.

But the story for pedestrian protection is mixed. Particular praise is due for important firsts - the manufacturer of the first car to achieve 3 stars in 2001 (Honda) and the first 4 star in 2005 (Citroen). Both represented pioneering design steps. Disappointingly this single 4 star result has not yet been repeated. A number of cars have achieved 3 stars to date but, overall, improvements are patchy and the incentive has not been as effective for pedestrians as for occupants.

Though the possibility is neither new nor straightforward, perhaps we are nearing the point where it is worth reconsidering whether pedestrian protection should be reflected in an additional overall rating for cars rather than being treated separately.

The UK continues to support Euro NCAP's activities on primary safety by chairing the working group in this area. The focus has been on advanced technology features, in particular Electronic Stability Control (ESC) which is now recommended and listed by model type as standard, optional or not available. Euro NCAP is also using its communications links to increase consumer awareness to give timely recognition, on a case by case basis, to developments where a manufacturer can demonstrate clear societal benefit.

UK research on including traditional primary safety aspects such as braking, vision, lighting, handling into a consumer evaluation was discussed although it is not being taken forward currently mainly due to the difficulty of providing clear accident evidence.

Secondary Safety

Compatibility, front and side impact: The UK has continued to contribute to the EEVC associated European VC-COMPAT research on car to car testing and simulation (modelling) including a full width wall (with load cells and deformable face) test and proposed criteria; the latter formed one of the test approaches reported in the VC-COMPAT final report issued early this year.

On side impact we continue to support the work of the EEVC. In particular the UK, along with France, Sweden and Germany are reviewing relevant databases. This work and outputs from APROSYS will help inform and direct future work.

Simulation: European research on the role of simulation is sometimes in the context of possibly replacing an approval crash test of a real car with a virtual test. Whether simulation could totally replace approval crash testing given the need for high levels of assurance remain open questions. Leaving aside the "need for testing" issue, two advantages of simulation might be to offer a greater number of tests replicating a variety of potential accident situations, or information on the effect of production and design variations. The UK is examining whether simulation of simple elements might be more appropriate, if less ambitious, for a first step.

Biomechanics: The UK has recently completed collaborative research with the EEVC on BioRIDII and RID3D to check their suitability for a rear impact test procedure.

Issues and Priorities (Secondary Safety): Two important priorities in secondary safety are side impact and rear occupant protection. In the rear of passenger cars the sophistication of protection systems is typically much less. Other issues include better protecting female occupants, an aging population, plus thorax injuries. It seems clear that providing optimised protection for different users and accident circumstances would gain from more sophisticated occupant protection systems. This may mean that dummy development is appropriate for future collaborative European research.

Pedestrians: Developments on pedestrian protection form two strands. One is the increasing use of frontal protection systems (FPS) with aftermarket devices covered from May 2007. The FPS Directive reflects a pragmatic approach ensuring FPS using advanced materials can deliver an equal level of safety to the base vehicle. At present we are awaiting a proposal from the European Commission on Phase 2 of the Pedestrian Directive. We recognise the challenge that delivering this second tier of standards presents for manufacturers, but we also acknowledge the need to maintain effective measures that reduce the number and severity of pedestrian injuries in practice.

Child Restraints

The importance of protecting children is reflected in their high national safety target.

Improving Standards: We welcome the inclusion of ISOfix attachment fixings in the CARS21 European proposals. A significant element of DfT research over many years has been on the development of a new side impact test, a contribution in support of an ISO working group which produced a draft side impact test for CRSs. We were therefore disappointed that, in consideration at the next ISO level, it was narrowly decided that the WG proposal would not be released as a standard.

Child Restraint Assessment Methods: We have continued to carry out research with partners in a consortium (New Programme for the Assessment of Child Seats - NPACS). Our contribution to the research drew on our national accident databases and assessed areas such as usability, risk of misuse plus dynamic performance in front and side impact. Some of this our research on side impact test procedures is being drawn on and potential protocols are being validated. We believe in the benefit of giving consumers this information and are working to bring forward a scheme, ideally in a European context.

Motorcycle Safety (including Helmets)

Some topics which are also related to the safety of motorcyclists are covered elsewhere in the paper e.g. DRLs and A pillars.

Moving forward on Motorcycle Safety. The Government's Motorcycling Strategy was developed with the full involvement of motorcycling groups. The National Motorcycle Council (NMC) is taking forward actions from the strategy; one subgroup covers actions on the risks of diesel spills and preventing these, braking, mirrors and current practice in tyre purchasing. A recent survey sought the views of riders and the 800 responses will feed into decisions on whether existing standards are sufficient.

DfT continues to take account of motorcycle accident data including the Motorcycle Accident In-Depth Study' (MAIDS) research project. It is currently supporting UK participation in a European project "Powered Two Wheeler Integrated Safety" (PISa). This project will take account of motorcycle accident data from a number of sources, including our own OTS project.

Helmet Assessment Methods: A recent project has been researching the performance of helmets on the British market currently and considering how a consumer information scheme might be implemented. It included some comparison testing and found a significant difference between the best and worst performances. We estimate that if all helmets performed at the upper level, 45 lives per

year could be saved in the UK. The research has produced a test protocol and is addressing assessment aspects. We are consulting and moving forward with a view to launching a rating scheme, Safety Helmet Assessment and Rating Programme (SHARP) later this year.

Large Vehicles

We are progressing two analytical research projects that are looking at the UK fleet to provide an evidence base for future decisions on vehicle safety.

The first is reviewing the effectiveness of existing safety measures and ranking the future priorities for passenger, agricultural and goods vehicles (excluding car derived vans). It is separated into phases. The first looked for evidence on how previous changes e.g. rear under-run protection affected casualty figures. The second phase includes analysis of accident data, particularly HVCIS. Overall, car occupants and pedestrians feature in many of the larger KSI groups. The study will go on to identify the most cost effective and feasible safety measures for larger vehicles.

The second project (Longer and Heavier Goods Vehicle Study) will assess the issues from the introduction of longer and heavier goods vehicles in the UK. The work is considering whether the benefits of increasing national limits are sufficient to outweigh the disbenefits, and what control measures would be needed if their use were allowed.

Primary Safety

Some wider primary safety aspects of advanced systems are covered in a later section.

A Pillars: UK research has sought to quantify the effect of larger A pillars on the field of view and whether and to what degree this may have increased the risk of accidents. While A pillars have been getting larger, and thus more likely to obscure vision, the significance as a contributor to accidents is difficult to quantify and is being considered alongside all the other contributory factors - both obscuration outside the vehicle and/or whether the driver was not looking correctly.

Mirrors (Lorries and Buses): We welcome the improvements in European requirements for mirrors on heavy vehicles which will help drivers detect vulnerable road users. The UK also experiences accidents on motorways involving left hand drive (LHD) lorries moving from the inside to an outer lane where a car may not be visible to the driver. (This is not a question of visiting lorries as some UK operators choose to have LHD vehicles if they are used a lot elsewhere in Europe.) The increased fitting of close proximity mirrors can help in some of these accidents but many occur because the car is in another blind spot to the front and offside of the lorry. These accidents create added road safety risks, raise public concerns and threaten network efficiency due to the inevitable delays and confusion that follows. We took the unusual step of issuing free Fresnel lenses to 40,000 LHD vehicles last autumn to improve the field of view in this area Early indications from this trial are that the number of accidents has fallen.

Daytime Running Lamps: We welcome the European Commission's helpful reconsideration of this issue following consultation in 2006. The UK response outlined our concerns that the safety case is weak, the cost benefit in UK estimates poor, the CO_2 impact significant and the effect on potential vulnerable road users unclear. Motorcyclists could suffer a dilution of their conspicuity if DRLs or dipped beams were used by all. In particular there seems no justification for measures at EU level and decisions are best made at national level depending on national circumstances.

Intelligent Speed Adaptation (ISA)

Following on from an early trials project, a further 5 year trials programme ended this year. It involved 20 vehicles fitted with ISA using (mostly) local speed limit data. The research looked at longer term effects on driver behaviour and attitudes to using ISA, and included a truck and, in track tests only, a motorcycle.

ADVANCING CAPABILITIES OF VEHICLES: OPPORTUNTIES AND CHALLENGES

The boundaries of advancing technologies continue to shift dramatically and what was once a technological dream quickly appears on top of the range models, and then soon transfer to the mass market. This trend is likely to increase – with some commentators predicting the bulk of future safety gains will come from this area.

A key and well know technology is Electronic Stability Control (ESC) and the UK has recently looked at the benefits of ESC using national accident data. This work suggests a worthwhile benefit for car accidents involving occupant injuries. However the UK benefit estimates are lower than in other studies.

Recent work undertaken for the DfT included six mini-studies by experts, each asked to consider how they might assess the likely performance of advanced systems. The overall aim was to evaluate different analysis techniques, identify gaps in data and suggest how they might be filled. This is a precursor to a larger programme of work to help assess the benefits and risks of the new technologies. The end intention is to put the quantification of benefits on a uniform and rigorous basis, including unknowns and sensitivities, and give a realistic assessment for the UK.

There are approaches that we might wish to encourage but which might be less marketable. For example, vehicle detection sensors can be used to predict an imminent unavoidable collision; this allows the initiation of emergency braking to reduce the severity of impact and the secondary safety systems to be alerted pre-impact. The capability of such collision mitigation could increase from "active and fixed" (secondary actions predefined) to "active and responsive" where the secondary safety actions are optimised for the individual(s) at risk and the particular accident circumstances.

In principle the design capabilities of advanced systems e.g. collision mitigation might be expanded, as experience in service grows, to allow progressively earlier emergency actions. Nudging outwards the performance boundaries of systems or modest steps seems a more likely, if gradual, route to a limited degree of increased system control.

Naturally with the level of opportunity from electronic systems comes a degree of risk. But the opportunities should be kept firmly in mind.

It is important that drivers readily understand how a system operates. Different warnings in systems having comparable functions or differences in how control is handed back to the driver from an intervention could cause confusion or a mistaken driver response. Such variations between systems are more likely in a fast moving competitive market.

Systems should not overload the driver. Neither should systems result in a false sense of safety or driver under-load which could reduce a driver's alertness. Vehicles will also operate over many years so core functions should be easily checked.

We have been active in helping ensure that the general Human Machine Interaction (HMI) aspects are recognised. We have supported work developing and updating the European Statement of Principles and aspects of other human factors work within RESPONSE3 work on a Code of Practice offering a generic approach to Advanced Driver Assistance Systems (ADAS).

In general, traditional vehicle standards groups have not been moving at the same pace as the marketplace. They face challenges in terms of how to develop appropriate tests for approval or consumer assessment and we do not pretend to have all the answers. Ensuring that safety assessments for advanced systems are thorough, demand a good level of performance from generic systems, while allowing for ongoing technical innovation, is not a simple task. For example, advanced systems having the same generic function can differ considerably in their capabilities and are not easily placed in neatly defined compartments; this may be more difficult in a tiered consumer rating than in regulations where a single pass level applies. An area where we anticipate activity is UNECE work leading to establishing ESC requirements for all vehicles.

The present overall situation is that, while recognising the capabilities of manufacturers and the work on good practice, some systems are developing with a relatively light regulatory touch. While this does allow the maximum freedom for new developments and innovation, the benefits of safety and convenience systems do not come without an element of risk. Striking the right balance requires careful judgements and, where specific measures are developed, an appreciable technical effort.

WHERE NEXT?

I take an enthusiastic and objective view on the potential future contribution from advanced technologies. There is of course a risk of being overoptimistic. But this cautionary note does not seem to apply to past predictions for vehicle technology as the rate of introduction of new and more capable advanced systems has been dramatic.

This does not mean that worthwhile advances in traditional areas will not continue to deliver valuable improvements although, in some of these, the progress is likely to be incremental. Others e.g. the combination of secondary safety with primary safety systems could allow a much more tailored response for a varied population. But the largest step gains are likely to lie with advanced systems.

Much will depend on the effectiveness of advanced systems. It is important to be rigorous and consistent

in determining benefits; these may vary depending on national accident circumstances.

Reviewing and taking stock has been a strand in a number of UK research areas. But whatever the picture, it is important that we share a research based vision of the possible gains and routes to achieve them, even though we may differ on how far we should go.

At the next ESV, the UK status paper will be covering progress in developing new casualty reduction targets beyond 2010. I am sure that these will be ambitious and challenging. What is certain is that attaining them will depend on continuing achievements in research and technology by experts at this and future conferences.