

Mr McIntosh said, "While we believe the 3-star rating is not good enough for a national highway many of the deficiencies can be fixed at relatively low cost. But it is vital for Australian road users that governments and the community realise the importance of road design in road safety. Roads are more important than you think - we all need to recognise the different risks on different parts of a road system.

"While the last Federal Budget allocated considerably more money to road construction for the AusLink network - and this was certainly welcomed by AAA - much more needs to be done to bring the entire Network up to at least 4 stars. We should expect that, with increasing traffic, we can have a national network which has low risk and hence a low crash rate.

"Five people die every day on Australian roads and 61 are seriously injured - these tragic statistics could be significantly lowered if more attention is paid to incorporating simple safety features in all road design and maintenance. Research confirms that improving roads can contribute more to reducing road

deaths than improving driver behaviour and vehicle safety. AAA and the motoring clubs strongly support the systems approach to road safety - safer drivers in safer cars on safer roads. A safe driver in a safe car should not risk serious injury or loss of life for making a simple driving error, such as a momentary lapse in concentration, because of a road with poor design elements."

The AusRAP Star Ratings Report was released by Australia's motoring clubs to highlight the condition of the AusLink National network. A National colour-coded map showing the Star Ratings for most sections of the highways in all States and Territories, except NSW (which was unable to provide AusRAP with the data), is available at [www.ausrap.org](http://www.ausrap.org).

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## Simulating Police Urgent Duty Missions

The following is an abridged version of a translation of an article that appeared in the German Journal for Police and Traffic Management - Police and Safety Technology, Volume 50-July/August 2005.

By Senior Police Superintendent Jürgen Pfaffenzeller, Bavarian Police, Sulzbach-Rosenberg

### Blue Light Action!

The blue light is flashing and the urgent duty siren wailing for another Urgent Duty Mission. These calls are part of daily police life - traffic accident, bank security alarm, assault, brawl or whatever. But the young police driver is sweating. His heart is beating fast! He has heard the siren on many occasions, but this is his first time sitting behind the steering wheel. This is his first Urgent Duty Mission.

There's lots of traffic around. Nonetheless he is doing 100 km/hr. through the city. Oh no! The next traffic light is on "red". And there's a long queue of vehicles waiting. What now? Pass on the left against the oncoming traffic? Traffic is heading towards us. We'll try, anyway. The driver of the red "Golf" heading towards us jams on his brakes and pulls to his right. The young police driver also. All went well. Now foot hard down once again, but seconds later it's hard on the brakes. The pedestrians have "green".

Again put your foot down. Why doesn't the guy in front pull over? Now he's even braking! Again jam on the brakes. But not enough! The police car shunts the car in front. Trouble! Switch off the engine. The young colleague is completely shattered. He gets out of the police vehicle. But he doesn't have to worry. He just steered the Urgent Duty car through a *virtual world* in the Police Urgent Duty Driving Simulator.



Fig. 1: High-End-Simulator with 6-legs movement system. En route to the destination all inertia forces are simulated.

## Future Dream?

No, because the Bavarian Urgent Duty Police have been using the most up-to-date simulation technology to train their police drivers in “Urgent Duty Missions” since 2002.

Junior officers do their Urgent Duty Missions training in a fully equipped, but modified 300 series BMW in a virtual environment. Practically all driving situations that occur in real traffic can be simulated and influenced in training sequences. The handling of stressful situations for the driver and co-driver, which can be boosted at will, is of principal significance. Both of them are under such pressure within a short time interval that their attention can be lost for a short moment resulting in fatal mistakes. Virtual mistakes are without consequences, but teach how difficult the first real mission will be. For the very first time simulation offers the opportunity to prepare Urgent Duty Missions within a no-damage framework.

## Judgements becoming less favourable towards police crashes

At one time, if there was a smash between a police car and a private vehicle during an Urgent Duty Mission, the private vehicle driver was usually considered at fault. However, for some time judges have not been prepared to trust police urgent duty drivers unconditionally. Recent judgments testify to a trend reversal. Professor Dr. Dieter Müller from the Saxony Police Academy has therefore recommended that Urgent Duty Mission drivers receive more intensive training in traffic rights under urgent duty conditions. After all, urgent duty and scout driving, which occur first and foremost on the public roads, are part of the basic task of a police officer. To conform to this requirement basic training and Continued Professional Development (CPD) form a non-negotiable part of modern police education.

## Driving is only a Means to an End

The Urgent Duty Mission contains more than the component “driving”. It entails the management of Police-specific tasks. Therefore training in an ordinary driving simulator alone is not sufficient. The goal of the total project “Simulation of Urgent Duty Missions” was to develop and test a training system supported by technology and based on didactic principles, in which the complex spectrum of tasks involved in a Police Urgent Duty Mission could be trained effectively and beneficially with regard to costs.

## Scientific Parallel Project

In order for us to carry out the training project, the “Interdisciplinary Centre for Traffic Sciences” at the University of Würzburg, under the direction of

Professor Dr. Hans-Peter Krüger, was commissioned to conduct a study.

The most important tasks were:

- Establishment of a total education concept on the basis of an analysis of work and traffic science;
- Definition of learning targets for the driving simulation itself as well as for the planned satellite learning stations;
- Concept preparation for methods of implementation;
- Preparation of options for examination of individual learning achievements;
- An inventory of knowledge elements that had to be understood in Urgent duty Missions;
- Development and execution of a targeted program for education of driving instructors;
- Establishment of an evaluation plan to compare the learning results of conventional training with those achieved using the simulation-supported concept.

The various curricula were agreed by the stakeholders, including police experts, with reference to objectives and practical applications. Among other subjects a catalogue of objectives for the training concept, as well as the traffic environment to be portrayed, was created. Specifically relevant training contents were defined and typical traffic scenarios were set out in which these objectives could be achieved effectively. Examples are the complex variations of critical driving situations in crossings and T-intersections, during overtaking and when driving in dedicated special lanes.

With the aid of these results it was possible to inform the simulator manufacturer of the requirements necessary to achieve the relevant traffic situation training.

## Technology Project “Simulator “

The engineering task was to produce the technology (hardware and software) required for the training system. A Europe-wide tender was called in 2000 and Rheinmetall Defence Electronics, a manufacturer of training simulators in Europe, obtained the order for this part of the project. Rheinmetall modified an existing driving simulator for the training of road transport drivers. BMW AG of Munich made available a motor vehicle body cab used for Police Urgent duty Missions and integrated it with the simulator system.

The more difficult task was the development of the software required for the project, because this would constitute the difference between a training simulator for normal driver training (handling of the vehicle) and the goal aimed at the integration of Urgent Duty and other Special Missions ignoring conventional legislation with the traffic environment.

## Structure of the new Training System

The new training concept for the schooling of Urgent Duty Missions consists of 4 modules.

### 1. Training in the Driver Training Simulator

Central to the simulator training is the training in danger situations, and this includes two centres of attention:



Fig. 2: The driver sits in an original BMW Vehicle Cab

Firstly the young officers should learn the various and typical reaction behaviours of other traffic participants when an Urgent duty Mission vehicle approaches. Then they must learn how to overcome repetitive and known dangerous traffic situations as far as possible with minimum risks for themselves and other traffic participants.

All distinct component exercises complement each other. They consist of getting used to missions (get to know the simulator), training drives (exercise of correct reactions) and test drives (evaluation of things learned). The specific functions of Urgent Duty Missions on motorways, highways and in urban areas are covered by means of dedicated databases.



Fig. 3: Control Room with Monitors for Co-driver and Instructor

The safe response to numerous traffic situations is trained such as:

- Driving across intersections with varying right-of-way rules;
- Crossing of several traffic lanes involving vision obscuration;
- Formation of traffic lanes and demanding “make way” situations;
- Driving on special driving lanes;
- Overtaking exercises.

The primary learning goal is the promotion of anticipatory driving technique and the achievement of handling competencies while interacting with other traffic contestants.

An instructor conducts the driving exercises individually in the simulator while observing the reactions of the trainee at an observation desk. The instructor assumes in addition the role of the command centre via a voice intercom.

At the conclusion all missions are discussed with the aid of a playback function, and the driving performance is judged compared with a catalogue of criteria. It is not necessary to completely play back each trip for the discussion, because the instructor can save specific situations during the training mission with a marker, and instead can jump from each stored situation to the next one.

### 2. Computer based Training

Working at PC learning stations as computer-based training is another important training concept (CBT).

In a multi-media application text material, images, sound tracks and film segments are presented that the cadet officers compose themselves. An instructor accompanies the learning of these lectures. A total of 4 lectures each requiring an execution of approximately 60 - 90 minutes has to be accomplished:

- Legal bases of the Urgent Duty Mission
- Team co-operation
- Orientation and navigation
- Risk minimization

(For example typical hazard situations are visualized and appraised by the assessor such as formation of lane grid locks or the crossing of several traffic lanes, with hidden vehicles crossing, by means of real-life photos as well as specifically programmed mission aspects stored in the simulator.)

### 3. Group Exercises

#### 3.1 Specific Urgent duty Missions: Hot Pursuit

The challenge of a hot pursuit assignment is the most difficult and risky form of Urgent Duty Mission and is frequently the subject of public debate and is treated with the trainees within the framework of group discussions. Central to this are the reasons for hot pursuit missions, the mental progression for the escape and pursuit motivation of the fugitive and pursuing officer as well as the weighting of tactical aspects of the mission.

We have deliberately refrained from the implementation of this subject in the driving simulation. Although it would be technically possible to simulate a virtual fleeing vehicle of the fugitive the danger of a “navigation motivation” had to be considered. The trainees would frequently try not to lose the fugitive vehicle from their field of vision, and therefore act contrary to public safety, which has to have priority over catching the fugitive.

### 3.2 Crew Management

This integrated practical training is performed in real traffic outside the Police stations and is intended to foster the teamwork of driver and co-driver in order to sensitize as a central criterion the efficiency for Urgent Duty Missions. Central in this is the efficient sharing out of the tasks in the mission vehicle and the reactions to stress situations.

Particularly the orderly procedure of the radio traffic with the Police Centre, mutual support to discover the approach route, recognition of dangers, and error-free handling of street directories and maps, as well as agreement for the tactical approach method to resolve the conflict at the destination of the mission is trained here.

### 4. Detention in real Traffic

The exercises also have to be carried out in real traffic. Central to these exercises to be passed under the theme “The vehicle as mission tool” is the most unlike variations of methods of detention in the public traffic arena.

The following topics are acted through:

- The nature of specific driving environment dangers in towns, highways and motor ways;
- The safe approach and unambiguous directing to suitable locations of the person to be detained;

- Competent actions in connection with uncertain or wrong reactions of the other traffic participants.

The instructor conducts a discussion after each exercise.

### Experiences

Since commencement more than 2,800 young Police officers have undergone this training. The acceptance of the separate training modules is very high among the officers taught. This particularly applies to the training equipment - the driving simulator. After a short acclimatization phase the training officers hardly notice any difference between virtual and real traffic environments.

The performance of the CBT segments is equally appreciated. The officers-in-training generally handle the Computer Based Training well and feel motivated because of the management of the “computer” medium. Effective transfer of things learned into practical use is generally assured.

In summary the evaluation of results demonstrates that officers using the modular simulator-supported training concept obtain the necessary engagement competencies in order to accomplish real Urgent duty Missions in a professional and safe manner. By offering the only safe option to portray relevant danger situations, simulation presents a unique opportunity to teach safe driver training strategies while excluding all types of risk.

Judging by requests, not only from Police Departments, but particularly also from Urgent Duty Services and Fire Brigades, there is a vast potential for training requirements using the system described above. As an integrated concept the simulator-supported driver training by the Bavarian Urgent Duty Police is unique, because it is far more extensive than pure simulator driving.

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## Policies of the Australasian College of Road Safety

By Ken Smith, Fellow ACRS

Have you ever looked at the policy page on the ACRS website? ACRS policy statements were created for two reasons: to have a reasoned statement on where the ACRS stands on different road safety issues and problem areas, and to provide a resource for ACRS members when needed for media statements, response to questions and the like.

Each policy statement is made up of the policy position statement itself, a short statement of the objective/s that implementation of the policy would achieve, and a discussion providing background and reasoning behind the policy position being adopted. There is usually also a list of references to substantiate the points being made and provide a source for further information.

It has been the practice for the National Executive to review policy statements to see whether new or updated statements are

needed, or to respond to an emerging need. If so a new or updated statement is written, reviewed by the Executive or in cases an 'expert' in the field co-opted by the policy committee, and submitted to members for consideration and adoption amongst the papers sent to members for the AGM. Because of the complexity of issues and the time available before the AGM it is usually not possible for members to seek amendment to policies - they have to be accepted or rejected by members voting at the AGM. On occasion, however when there has been an objection to a proposed policy statement it has been further considered, modified or withdrawn altogether.

There are now some 24 policy statements in four groups. It has not been possible to review them every year, and some it must be admitted are very much in need of updating. The ACRS National Executive at a recent meeting decided that policy