



The Sophisticated Design of Driver Training Facilities



GB-Consult and its Range of Service

The award-winning Austrian engineering company with a global reputation for technical excellence and state-of-the-art projects operates in these areas:



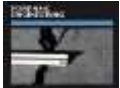
Architectural Design



Structural Engineering



Construction Supervision



Forensic Engineering



Planning & Supervision of Road Safety Training Centers

RSTC - Road Safety Training Centers



- 50% of the turnover done abroad (Spain, Egypt, Germany etc.)
- For quality assurance of our design and especially of the construction works, we cooperate with **the asphalt and roadwork laboratories of the RWTH Aachen and the FH Aachen** (university of applied sciences).
 - both of these laboratories have the certification acc. to the RAP STRA 2010 (guidelines for the acceptance of testing laboratories for construction materials and mixtures in road construction, 2010).
- Our project director for RSTC and race track projects, Mr. Georg Heuer, is also technical manager of the laboratory of the FH Aachen (university of applied sciences).



DRIVER TRAINING BEHIND THE WHEEL

- Create a center of competence with a real life training „behind the wheel“
- Help to achieve national safety targets
- Reduce the amount of injuries/deaths
- Reduce the number of vehicle crashes
- Save fuel costs



TRAINING FOR ALL TARGET GROUPS

- Novice / Teenage drivers
- Bus drivers
- Government departments, i.e. police, highway patrol, special agencies, ambulance, fire brigade
- Truck drivers (fleet management)
- Motorcycle drivers



All drivers are invited to improve their knowledge.



DRIVING WITH A TRAILER



Knowledge	Skills	Awareness
<ul style="list-style-type: none"> ➤ Influence of the trailer on the behavior of the vehicle ➤ Influence of the combination of truck and trailer; different types of trailers ➤ Counter measures when the vehicle shows unwanted reactions due to centrifugal forces and alternation of load ➤ Correct viewing and steering technique ➤ Electronic and technical equipment in connection with the trailer 	<p>Participants learn to:</p> <ul style="list-style-type: none"> ➤ Use the correct viewing and steering techniques when driving with a trailer /an articulated truck ➤ Recognize unwanted behavior of the vehicle and/or the trailer very early ➤ Apply the correct sequence of actions when the vehicle starts to understeer or oversteer ➤ Recognize the danger to roll over and react properly 	<p>Participants become aware of:</p> <ul style="list-style-type: none"> ➤ The influence of speed on centrifugal forces ➤ The causes of unwanted behavior of the vehicle, especially the effects and dangers of driving mistakes ➤ The fact that speed requires space (which normally is limited in traffic) ➤ The difficulty to assess driving situations and to chose the best sequence of actions



ROLL OVER PREVENTION WITH A TANKER



Knowledge	Skills	Awareness
<ul style="list-style-type: none"> ➤ Reasons for roll over s (load distribution, steering behavior) ➤ Counter measures when the vehicle shows unwanted reactions due to centrifugal forces and alternation of load ➤ Behavior to avoid roll over ➤ Influence of load and of electronic and technical equipment 	<p>Participants learn to:</p> <ul style="list-style-type: none"> ➤ Use the correct viewing and steering techniques ➤ Recognize unwanted behavior of the vehicle very early ➤ Apply the correct sequence of actions when the vehicle starts to tilt ➤ Recognize the danger to roll over and react properly 	<p>Participants become aware of:</p> <ul style="list-style-type: none"> ➤ The influence of speed on centrifugal forces ➤ The causes of unwanted behavior of the vehicle, especially the effects and dangers of driving mistakes ➤ The fact that speed requires space (which normally is limited in traffic) ➤ The difficulty to assess driving situations and to chose the best sequence of actions



ECO DRIVING WITH HGV



Knowledge	Skills	Awareness
<ul style="list-style-type: none"> ➤ Influence of driving style on fuel consumption ➤ Reduction of air resistance, rolling resistance, and acceleration resistance ➤ Planning the trip ➤ Torque and power progress, combustion and the influence on fuel consumption ➤ Acceleration, driving, braking and stopping in a fuel saving way 	<p>Participants learn to:</p> <ul style="list-style-type: none"> ➤ Drive in a foresighted and eco friendly way ➤ Recognize traffic situations early and react to them ➤ Use the correct gear and shift gear at the optimal moment ➤ Use the rolling energy and avoid unnecessary braking and stopping 	<p>Participants become aware of:</p> <ul style="list-style-type: none"> ➤ The advantages of a foresighted and fuel saving driving style ➤ Their personal benefit of a foresighted and anticipatory driving style ➤ The possibility to reduce fuel consumption and become faster



LOAD SAFETY TRAINING ON HGV



Knowledge	Skills	Awareness
<ul style="list-style-type: none"> ➤ Legal background ➤ Forces on the load and friction values ➤ Load securing equipment and correct usage ➤ Securing methods (blocking, top over lashing, direct lashing) ➤ Calculation of securing forces and use of tables 	<p>Participants learn to:</p> <ul style="list-style-type: none"> ➤ Find the best securing method for the respective cargo ➤ Assess the vehicle and the securing equipment ➤ Use the lashing equipment correctly ➤ Determine the required number of lashings according to the chosen securing method 	<p>Participants become aware of:</p> <ul style="list-style-type: none"> ➤ The forces on the load during driving ➤ The load securing possibilities of different HGV's ➤ The influence of friction and how to increase it ➤ The advantages/disadvantages of the available load securing methods



The ultimate Driver Training Facility

- Complete Package of Training Modules (on 36 acres)
 - Skid Plate, Circle, Downhill Track, Dynamic Area, 2-wheels Area, Handling Track, Offroad Area
- Target Groups:
 - Professional drivers (trucks, buses)
 - Non-professional drivers (cars, motorcycles)
 - Traffic Training (schools, kindergarden)
- Turnover Assumptions
 - 20.000 participants per year
 - 10 participants per group
 - 330 operating days per year
- Investment: \$ 12 million
- ROI: 4 ½ years



TECHNICAL DETAILS

- Slippery training surface
- Speed measurement
 - Incl. speed display for the instructor and drivers
- Obstacles
 - Suddenly appearing
 - Cannot harm the vehicles but allow the simulation of different critical driving situations
 - Two types: water obstacles (creating an impact impression when the driver hits the water fountains with the vehicle) and mechanical obstacles (appearing more solide and causes very realistic reactions of the drivers)



TECHNICAL DETAILS

- All modules are remote controlled by special electronics
- 1/3 of the investment is invisible (under the asphalt layer)



OUR MODULAR SYSTEM



Road Safety Centers – Training Modules

- **TM1 – The Skid Plate**
- Nearly flat track (decline of not more than 2%) with two rows of water obstacles (appearing automatically when a vehicle runs over the induction loops in the road surface)
- To create a slippery surface, the low friction surface is irrigated with water overflow
- Before vehicles enter the slippery training track, they run over a hydraulically operated skid plate (rear wheels are pulled sideward, causing them to slip)
- Enables practicing
 - Slalom driving
 - Emergency braking, braking comparison
 - Stabilizing a skidding vehicle
 - Distance exercises



Road Safety Centers – Training Modules

- **TM2 – The Circle**
 - Whilst TM1 simulates the straight road, TM2 provides circular lanes which are also suitable for all kinds of vehicles
 - In the middle of the corner, two water obstacles can block the complete track or part of it
 - Enables practicing
 - Circular slalom driving
 - Cornering
 - Viewing and steering techniques
 - Under- and oversteering behavior
 - Emergency braking whilst cornering
 - Roll-over prevention



Road Safety Centers – Training Modules

- **TM3 – The Downhill Track**

- On the downhill track the behavior of a vehicle is more extreme, especially brake and serve maneuvers can lead to severe oversteering.
- The decline is approx. 9% that passes into a nearly flat bend to the left
- Water overflow system is again implemented, as well as two rows of water obstacles
- Enables practicing
 - Slalom driving
 - Emergency braking downhill
 - Cornering
 - Under- and oversteering behavior
 - Distance exercises and many more



Road Safety Centers – Training Modules

- **TM4 – The Dynamic Area**

- All exercises on TM1 and TM2 can be done here with higher speed and under conditions with higher friction.
- Obstacles on selected positions provide the creation of manifold exercises
- Exercises can be
 - Slalom driving
 - Braking
 - Cornering
 - Handling
 - Viewing technique (blind spot exercises)
 - Distance exercises
 - Roll-over prevention



Road Safety Centers – Training Modules

- **TM5 – The 2-wheels area**

- This is a special area dedicated for motorcycles and moped drivers.
 - The training program consists of MSP (green), circle (red) and dynamic area (blue)
- TM6 combines several training tracks-in-1 to train basic exercises such as
 - Slalom driving
 - Cone alleyway
 - Stop and Go exercises
 - Turning maneuvers
 - Braking & handling



Road Safety Centers – Training Modules

- **This is designed to train the correct behavior in daily road traffic.**
- Drivers learn the advantages of a defensive, foresighted driving style and are prepared to implement safe routines in daily driving.

Example for a handling track with high long straight passages



Handling Track possibility 1

Example for a curvy handling track



Handling Track possibility 2

Road Safety Centers – Training Modules

Examples for handling tracks that integrate TMs



Integration of Step 1 TMs into the handling tracks



Road Safety Centers – Traffic Training

- Additionally, Step 2 provides daily traffic situations such as different types of junctions, a hill, traffic cycles, traffic light controlled intersections, traffic signs, etc.
- Parking training can also be integrated in this area



Slow speed and parking training on Step 2



Traffic training on Step 2 of the RSTC USA



Road Safety Centers – Additional usages

- **Karting/HandlingTracks**

- This provides another possibility to utilize the facility efficiently.
- Karting tracks can be used simultaneously to parts of the traffic training or after road safety trainings are completed for fun & events



Road Safety Centers – Additional usages

- **Offroad Area**
 - An offroad terrain for 4WD, motorcycles, trucks or quads can be included in a driver training facility.
 - This area can be built for
 - Training
 - Races
 - Just for fun or
 - Special events

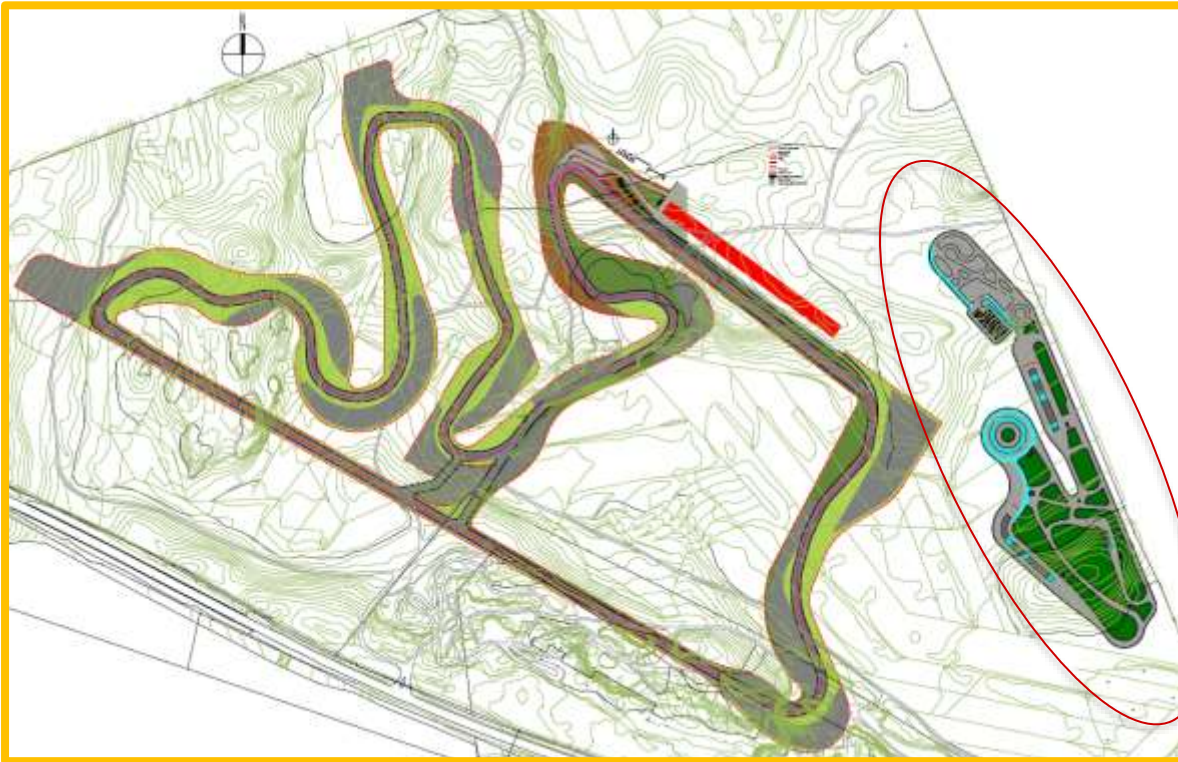


References



References

Kymiring Kouvola (Finland)



Upgrade of existing race track
with driver training facility

References

KAEC (Saudi Arabia)



Drift handling course fully irrigated.



References

Cairo (Egypt)



References

Racetrack Wachauring
(Melk, Austria)



Bresse (France)



The whole course is irrigated for 24/7 wet training sessions.



References

Asturias (Spain)



Madrid (Spain)



References

Saalfelden (Austria)



Marchtrenk (Austria)



References

Graz-Lebring (Austria)



Innsbruck (Austria)



References

Sanem (Luxembourg)



Teesdorf (Austria)

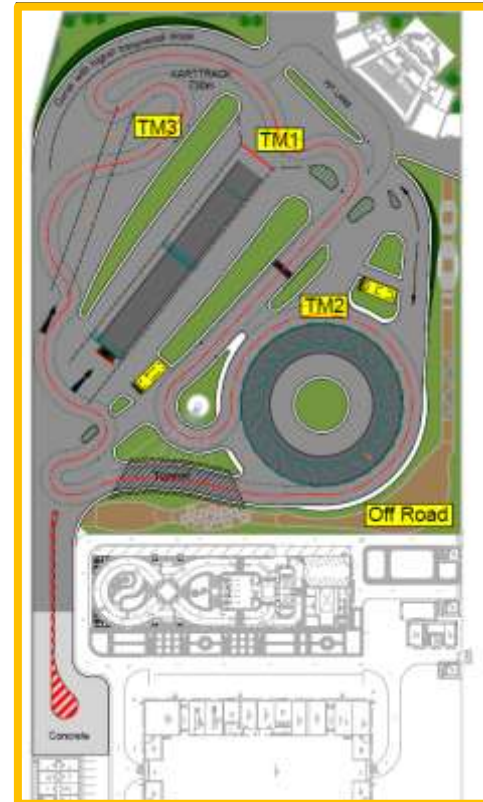


References

Baku (Azerbaijan)



Project Kuwait



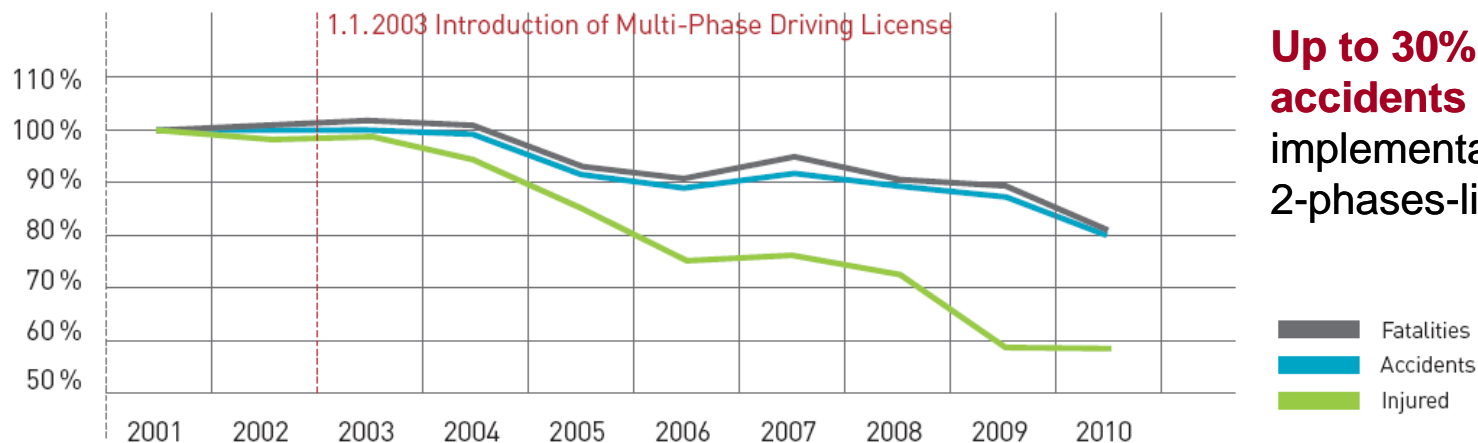
Study Results & Practical Experience



Young people and the 2-phases-license system

- In 2010, 14,198 young people were injured or died in road traffic accidents in Austria
- Since 2001, the number of young people that were killed has declined by approx. 41%
- After the introduction of multi-phase driver license in 2003, the number of accidents of young people as well as injuries and fatality has fallen up to 30%

Accidents causing injury to young people (15-24 years old), young people injured and killed in the period 2001-2010 (Index Basis: 2001)



Up to 30% less accidents after implementation of 2-phases-license-system

Safety Training at BP (Tanker Driver)



- Started 1990
- Integrated in BP HSSE System
- Special training with “Anti-Rollover Vehicle”
- Modular Training
 - Road Safety
 - Defensive Driving, Video Feedback
 - Economy Driving, Loading Safety
 - Healthcare, etc.

Results (after 1.5 years):

- Rollover accidents: reduced by 80%
- Rear-end collisions on wet roads: reduced by 60%

Consequence:

Every driver has to receive special selection, education and further education programs annually.

Source: Test & Training International



Safety Training at Billa (Fleet Management)



- BILLA is a member of REWE Group Germany (an international supermarket chain)
- They maintain a fleet of 550 vehicles
- On average, there are 1.7 accidents caused by each of their drivers annually.
- The average cost per accident is € 2,400 / \$ 3,000 (not including consequential costs)
- Approximately € 2.2 mio / \$ 2.8 mio of the costs involved with these accidents are borne by the insurance company annually
- The insurance company committed BILLA drivers to attend Testing and Training programs.
- This training consisted of specialized training and real life situations with video analysis

Results (after 1.5 years):

- Accident rate was reduced from 935 to 605 annually
- Reduction of accident costs by **€ 792,000 / \$ 1 mio** annually

Source: Test & Training International

Training on Fuel Training at Blaguss (Bus Driver)



- 140 busses in use, 80 drivers participated in the training
- 2 day training (combination of driving safety and economy training)
- Investment approx. € 600 / \$ 760 per participant (incl. working time)
- Each bus covers a distance of approx. 80,000 km / 50,000 miles per year and uses up 30-32 liters / 8 gallons of fuel per 100 km / 62miles
- This is a saving of 72,000 liters / 19,000 gallons diesel fuel per year for 60 busses

Short-term result:

- Approx. 10% reduction of fuel consumption

Long-term result:

- A consistent reduction of 5%

Source: Test & Training International



Training on Fuel Saving (Postbus)



1.600 Bus drivers were trained using a **modular training** system of two training days per participant!

Long – term consumption after the ECO Training:
32,22 million litres /year i.e. 8.5 millions gallons/year

Previous consumption: 34,12 million liters / year
i.e. 9 mio gallons/year

**1,9 million
liters less!**

**i.e.
~130,000
gallons less**



Source: Test & Training International



Letters of Recommendation





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Salzburg, May 2013

To Whom It May Concern,

The Klacska group is a specialist in offering logistical solutions for the distribution of mineral oil products. The services are spread all over the territory of Austria as well as the developing countries in Eastern and South-Eastern Europe.

Operating a fleet of approximately 1000 tankers in 14 European countries, we serve nearly all major fuel trading companies in the region.

Safety for drivers, customers and environment is a major issue for us. Besides following all international *Accord Dangereux Routier* (European regulations concerning the international transport of dangerous goods by road) regulations, we have also developed our own safety standards. We cover all legal and internal regulations for dangerous goods established by the Austrian authorities, customers and ourselves. Successfully passing all internal training and checkups on the road, are the basic requirements for all our truck drivers.

In addition to all above mentioned safe driving initiatives, we mandate all our drivers to train at the facilities operated by the Austrian Automobile Club (OAMTC).

We are proud to say that this training has significantly reduced the accident rate by 95% within the last 15 years and is permanently reducing fuel consumption of the fleet.

Sincerely,

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Managing Director

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BLAGUSS
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Weil jeder Ziele hat

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Wien, 3.9.2013

To whom it may concern,

Blaguss is an Austrian bus company and travel agency.

Buses are operating within Austria as well as abroad as part of „Eurolines“ (offering more than 600 connections within Europe).

The company also has nine subsidiaries (in Austria and in the eastern neighboring countries) which are geared to special offers.

Operating a fleet of 350 buses, safety for drivers and passengers is playing a main role for us as well as a positive environmental behavior. All our drivers have to successfully pass a practical & theoretical safety training for which we are using the driver training facilities, operated by ÖAMTC (the Austrian Automobile Club). On these road safety training centers, dangerous situations are simulated and optimal behavior is practiced to reduce vehicle crashes or worse.

After continuously training, we have successfully reduced the accident rate by 12 % with the last 3 years as well as significantly reduced costs for fuel.

Best regards,



Mag. Paul Blaguss
CEO
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BENEFITS OF OUR DRIVER TRAINING FACILITY

- Standardised Training Modules
- Multifunctional usage
- Enhance skills and knowledge
- Influence drivers' behaviour
- Create safety awareness





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