

BLIKSUND

Crash Recovery System

Certified Instructor Program 2023-2024

Notes

BLIKSUND CRS

Programme
CIP 2023-2024

The CIP (Certified Instructor Programme) is a training programme for technical assistance instructors in the regions. This long-term programme supports instructors in using the CRS system. Both for operational deployment and safe training with vehicles.

1. Introduction, learning questions and objectives
2. Updates to CRS system
3. Assignments
4. Providing access
5. Hydrogen vehicles
6. eCall and assignments
7. Developments in extinguishing agents and methods
8. National publications

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1.

Introduce and learning questions

Getting acquainted and assessing the group's knowledge and learning questions fo this training course.

Write the learning questions on a flip chart or board and make sure you include them in the presentation. At the end of the presentation, you will use these learning questions to further fine-tune your thinking. Have the questions been addressed?

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1.

Objectives of the Certified Instructor Programme 2023–2024

Identify the CIP exercise objectives.

Say that this presentation will also be available to CIP participants and can be downloaded from the website www.moditech.com.

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News flashes

Discuss some recent events with vehicles, what are the issues we may encounter with the new fleet and er

Risk of collapse

Modern electric vehicles have an impact on emergency services and, as described in the article by the British Parking Association, also on the construction of car parks, for example. Where a vehicle weighed between 1000 and 1500 kg 10 years ago, an electric vehicle weighs between 2000 and 2500 kg. Car parks from the 1960s to 2010s were not designed for this. In the Netherlands, too, regions are urging not to allow electric vehicles in car parks due to the risk of fire.

Extreme rainfall

In Italy, following the recent floods, electric vehicles that had been submerged were recovered and stored separately as a precaution to avoid the risk of fire.

Fire in electric transport

The Amsterdam fire brigade threw a burning e-scooter into the canal to extinguish the fire. A creative way of immersing.

Tinkering with charging

On Oud Beijerland, the police found a Tesla that had been attached to a lamppost by the owner for charging. Always be alert to strange situations when responding to incidents!

2.

Updates to the CRS

1. Search functionality
2. Roadmap with upcoming new vehicles
3. Energy storage systems
4. QR codes
5. Improved number plate query
6. CRS specific customer question: Handover protocol form
7. CRS developments: OEM emergency numbers
8. Cabin variants for trucks
9. Vehicle weight visible in the CRS

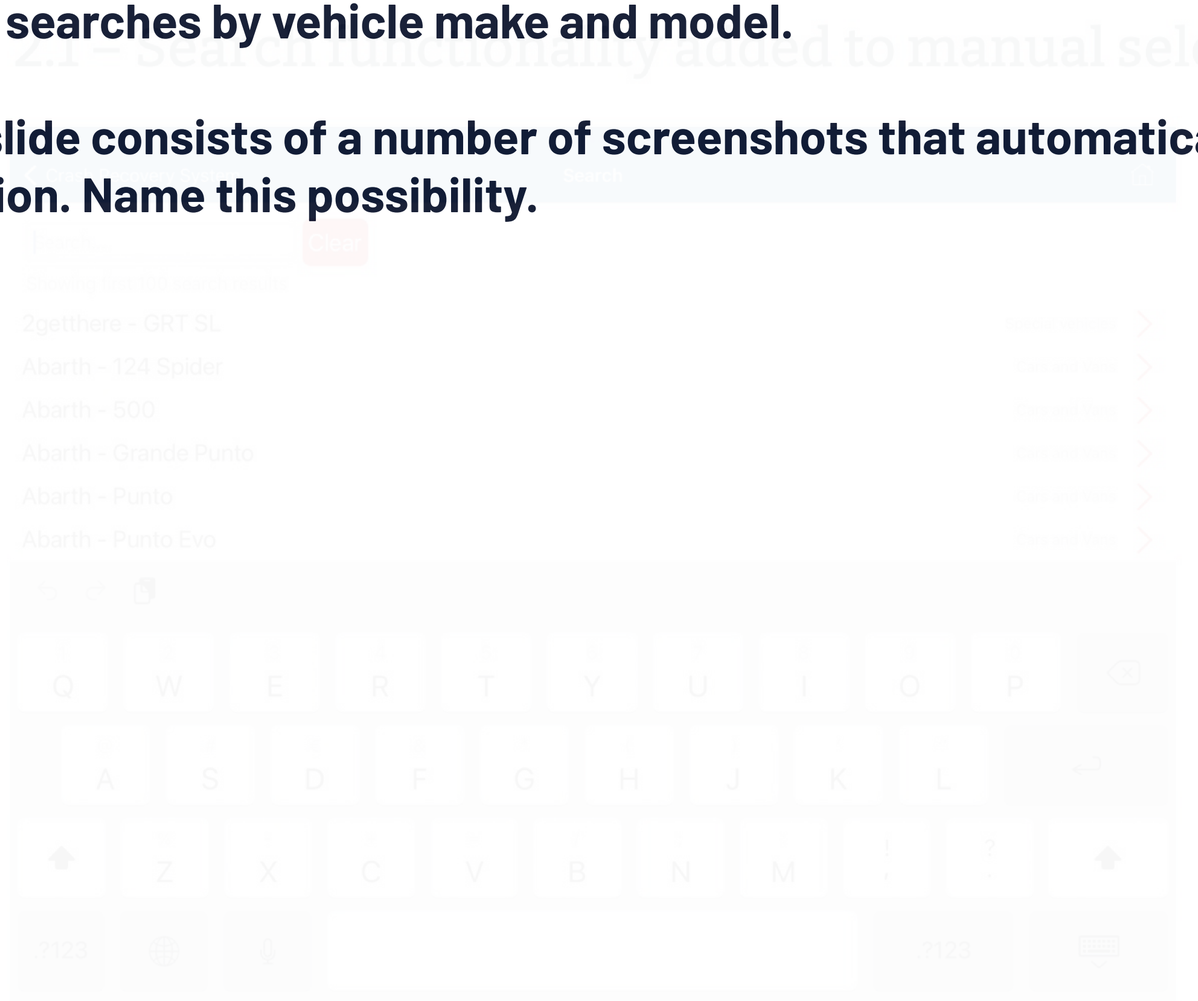
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2.

Updates to the CRS

A Search functionality has been added to the manual selection procedure, allowing quick searches by vehicle make and model.

This slide consists of a number of screenshots that automatically show the Search function. Name this possibility.



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2.

Updates to the CRS

A selection from the total list of newly added vehicles.

Volvo EX90
Agromec 700 Vario Electric
Van Hool Exqui.City 24 Electric
Zeekr 001
Doosan DX300LC Electric
Vinfast VF 8

Say that the current list of vehicles can be found by following this link: https://www.moditech.com/nl/nieuws/nieuwe-voertuigen-voor-de-crs-database-in-2023/



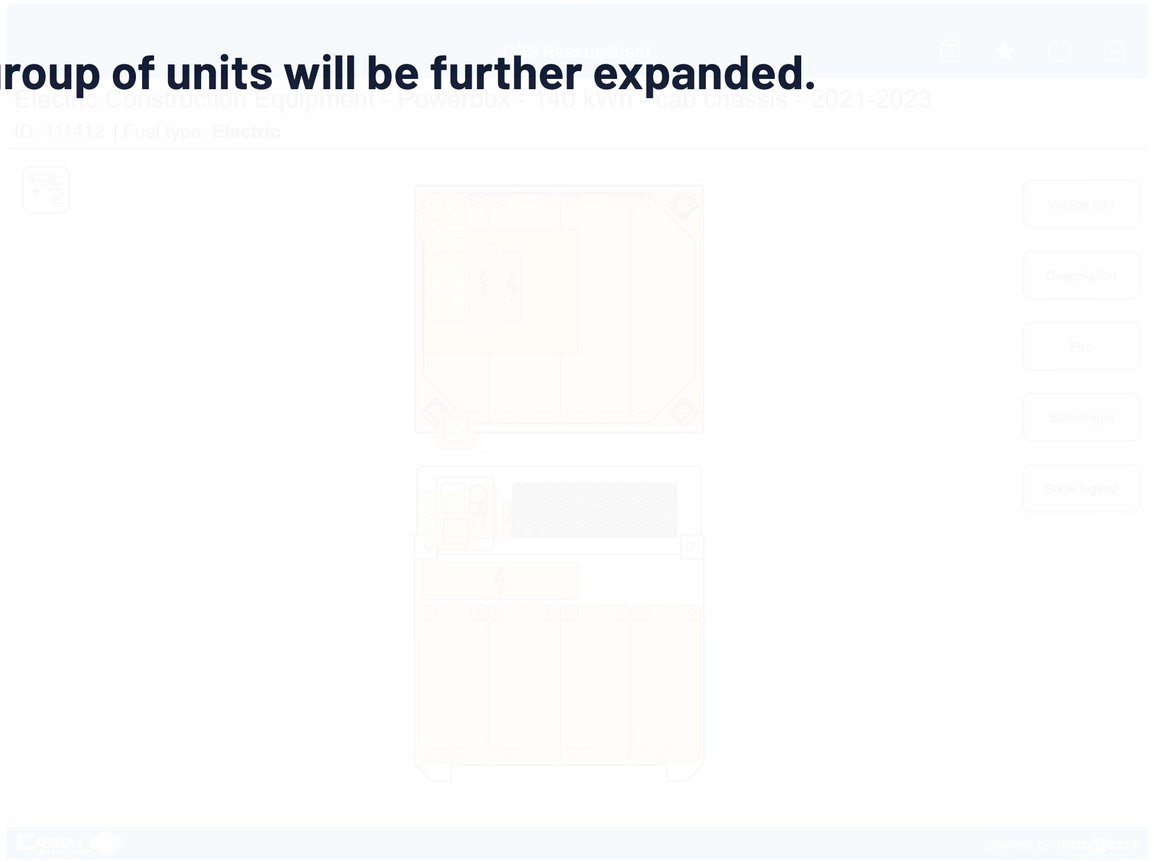
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2.

Updates to the CRS

Mobile power boxes are increasingly appearing in the streets. Often at construction sites, events, but also temporarily to support installations such as transmission towers, etc.

This group of units will be further expanded.



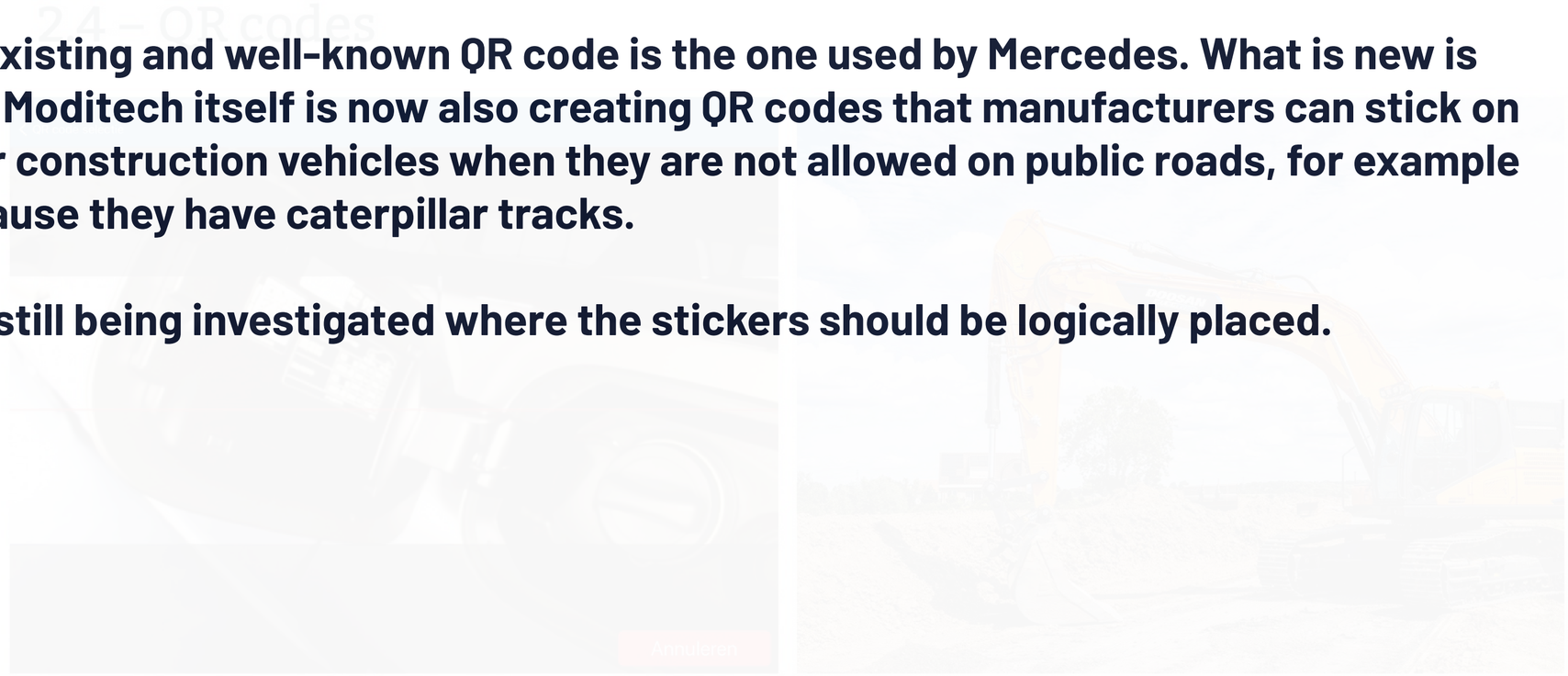
2.

Updates to the CRS

To practice, use the QR codes in the lesson plan to search for the 4 vehicles.

An existing and well-known QR code is the one used by Mercedes. What is new is that Moditech itself is now also creating QR codes that manufacturers can stick on their construction vehicles when they are not allowed on public roads, for example because they have caterpillar tracks.

It is still being investigated where the stickers should be logically placed.

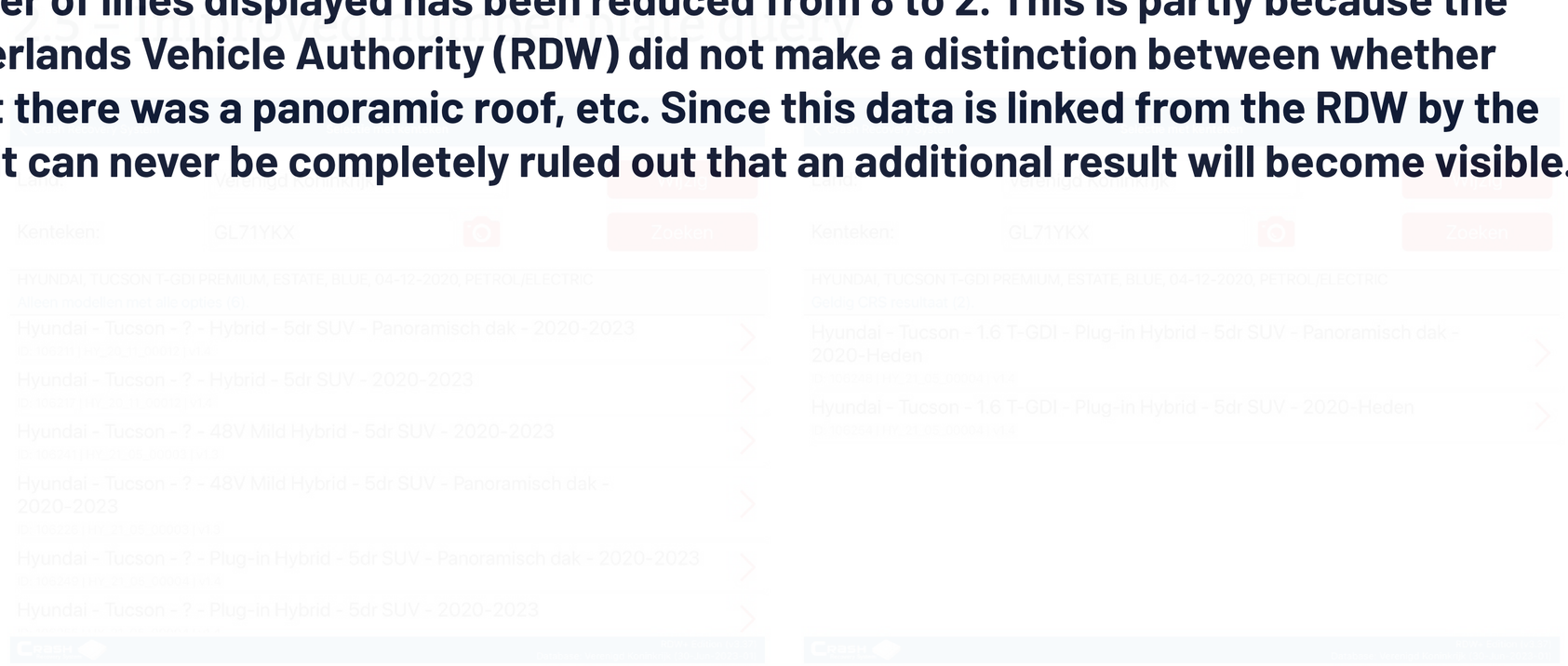


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2.

Updates to the CRS

The number plate query for Dutch vehicles has been significantly improved. The number of lines displayed has been reduced from 8 to 2. This is partly because the Netherlands Vehicle Authority (RDW) did not make a distinction between whether or not there was a panoramic roof, etc. Since this data is linked from the RDW by the CRS, it can never be completely ruled out that an additional result will become visible.



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2.

Updates to the CRS

Moditech also develops products on request based on specific customer requirements. In Germany, for example, there was a need for a digital transfer form from the fire brigade to the recovery companies.

This form is not available for the Netherlands.



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2.

Updates to the CRS

The CRS will contain lists of various emergency telephone numbers of car dealers/ networks that can be selected by make and type. These numbers can be reached in the event of malfunctions or urgent assistance requests for specific problems with a vehicle of the relevant make.

2.

Updates to the CRS

To make the CRS system easier and faster to consult for trucks, cabin variants are no longer always shown separately.

In many cases, it does not matter which type of cabin is on a chassis when displaying safety features during an emergency response. The variants are then shown in the drawing with dotted lines.

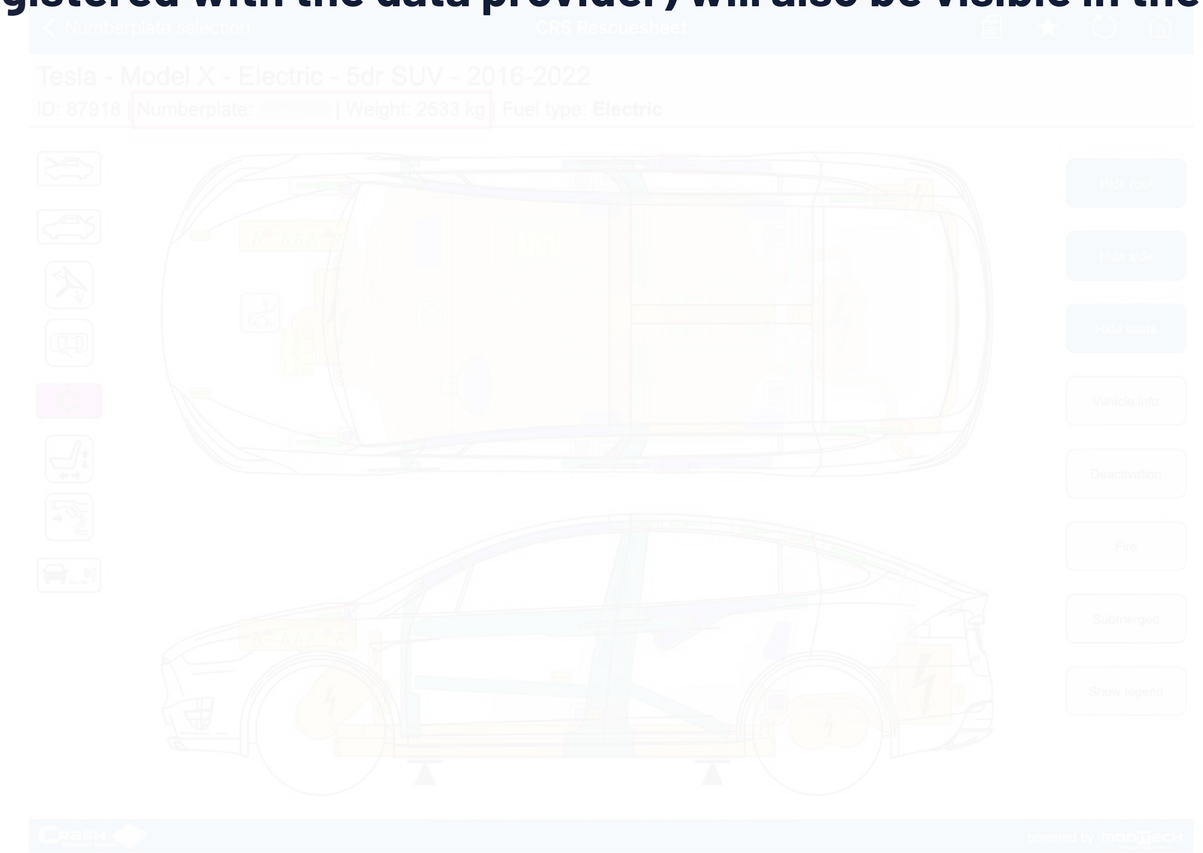
The safety features remain the same in all cabin variants (airbags, belt tensioners, key, cabin suspension, tilt direction, etc.)

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2.

Updates to the CRS

Vehicle weight will become available in the Crash Recovery System very soon. After installing the next software update (December 2023) of the CRS, when retrieving a vehicle through vehicle selection via the number plate or chassis number, the weight (if registered with the data provider) will also be visible in the Rescue Sheet.



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Extra

Examples from practice

Have the displayed number plate queried in the CRS. (11-BLX-9)

What is striking here?

The number plate shows a Volvo truck, whereas the picture shows that it is a motor vehicle. This is not an error in the CRS or the RDW, it has to do with the fact that this truck is registered as a Longer and Heavier Vehicle (LZV).

Incident description

The incident in which this vehicle was involved was a possible leak in the cooling system of the motor vehicle, in the middle of the night. On site it turned out to be an LZV truck running on LNG. The picture above left shows the explosion hazard meter that went into alarm due to the leaking natural gas. Between the cabin and the container there was ice formation on the overflow pipe and a "urine stream" of liquid natural gas leaking onto the ground. This caused the ex-ox meter to go into alarm. The pipe was frozen and there was a lump of ice on it. You cannot smell the gas, LNG has no odour.

The truck had been refuelled and parked at the auction site in Honselersdijk, in the middle of a car park with 85 other vehicles. No driver could be reached, nor could the transport company. The CRS was used to check whether the LNG tank could be secured. It turned out that it had not been closed correctly after refuelling. The vapour return line had not been turned back properly. We solved this. In the meantime, we had a mechanic come to the site through the Volvo truck dealer to check it out. The leaking stopped, but the ice did not simply disappear.

In the meantime, due to the site being full of parked trucks, we placed two water cannons dry on the spaces between the trucks. This was to avoid losing a whole parking lot full of trucks in the event of a fire. Once the ice was gone, the leak had finally stopped and the mechanic had done a check, we packed up.

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Extra

Examples from practice

Deviation of the search result in the CRS

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Extra

Examples from practice

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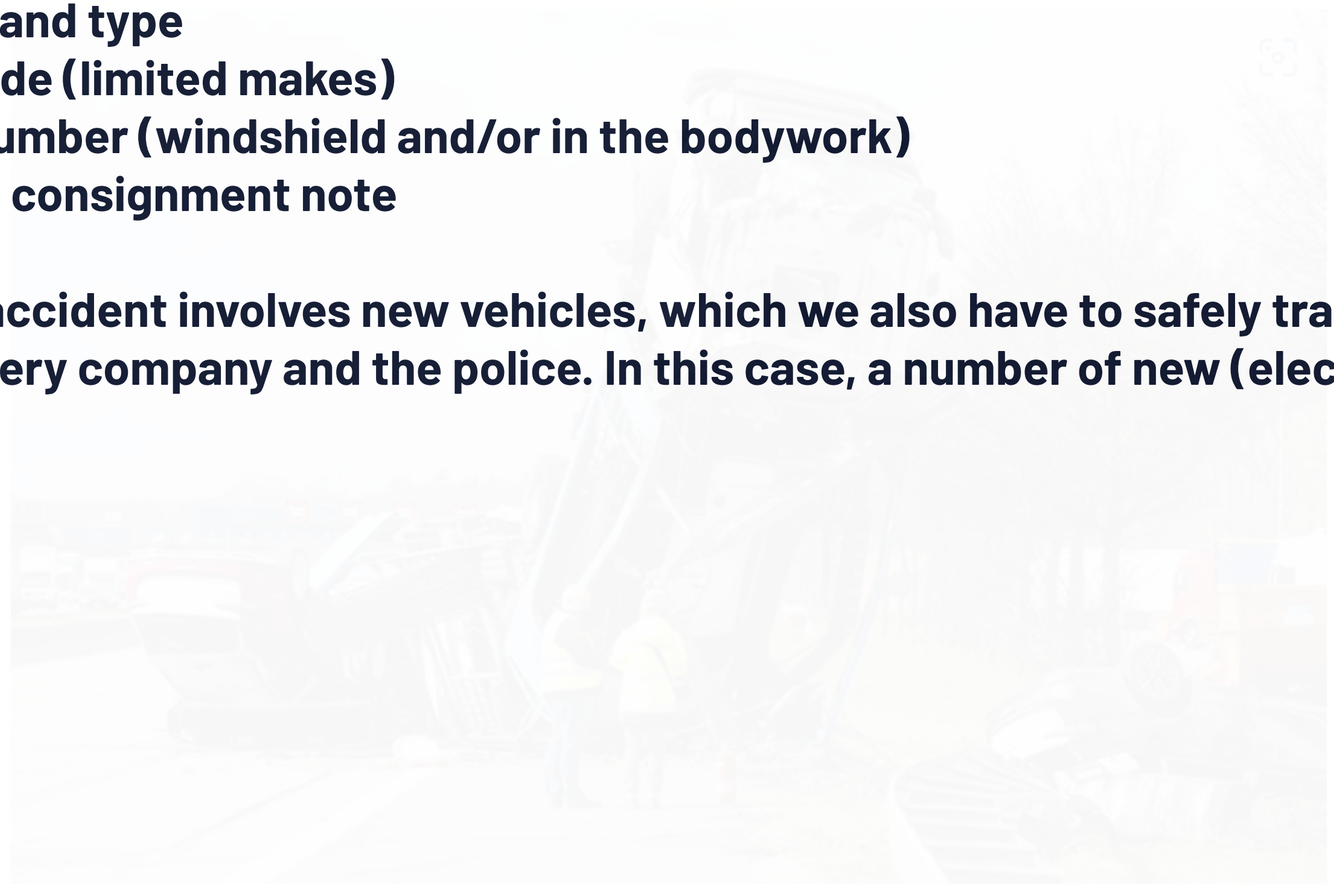
Extra

Examples from practice

Ask how vehicles can be searched in the CRS if NO number plate is available or if it is a fake number plate?

Make and type
QR code (limited makes)
VIN number (windshield and/or in the bodywork)
Truck consignment note

This accident involves new vehicles, which we also have to safely transfer to the recovery company and the police. In this case, a number of new (electric) vehicles.



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3.

Assignments

This section consists of 2 topics

- Domino/symbols
- Case study; assignments 1-4; in groups, describe the questions associated with the assignments; use the CRS.

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3.

Assignments

1 - 4

Divide the participants into groups, with 2–4 participants per group. Hand out the assignments and have each group work out the 8 assignments. Allow approximately 20–30 minutes for these assignments; you will notice when the assignments have been completed.

Group 1 covers assignments 1–4 and Group 2 covers assignments 5–8.

You can then go through the assignments and answers based on the findings and the following sheets.

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3.

Assignment 1

There are a number of factors that play a role in this accident

Exploration: Are there victims, how many, and can they be freed quickly? What's the load, what's burning?

What command is given? Try to extinguish the fire, do not come into contact with the load, ensure use of PPE, stay out of smoke.

What particular dangers does this accident present? A diesel truck with a large number of HV batteries intended for new vehicles to be built, potentially (fire) hazardous, no SRS linked to separate batteries, so querying in the CRS does not provide any additional solution options.

How do we secure the situation? Extinguishing, immersion container, external expertise required, consider environmental factors.

What solutions does the CRS provide? The CRS is not intended or designed for this, at most you can find information about the type of batteries. Information is available for the truck.

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3.

Assignment 3

This vehicle entered the water, with all persons getting out of the water independently. The ch
by the divers was to rule out that there were no longer any people in the wreck.

What is special about this case is that the vehicle brought the driver's seat and the steering wheel closer together due to the underwater short circuit. If there had been another victim here, it would have been difficult to free them.

We must always be aware of adverse effects; water and electricity do not tolerate each other well and the 12 volt system remains active underwater. Short circuits under or in water can activate certain devices (airbags, seat belt tensioners and ROPS). Be aware of this! Not only in emergency services, but also always in diving and surface rescue!

Considerations: Are there victims in the vehicle? What type of propulsion?
What command is given? Explore in and around the vehicle, DO NOT enter the vehicle
What tools/resources should be used?
How do we secure the situation?
Keep your distance from the airbags!
What solutions does the CRS provide? If possible, remove the vehicle from the water.

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3.

Assignment 3

In this case, a car crashed into a tree at high speed in the middle of the night. The driver got out, the passenger was stuck.

Considerations: Which safety features pose a problem when extricating? What is the best direction of extrication?

What command is given? Stabilise and create space

What tools/resources should be used? Stabilisation, CRS, hydraulic tools, cover foil, protective plates

Can we easily cut away the B-pillar? The vehicle is very strong, but the B-pillar can be cut at the bottom if you look in the CRS.

What special safety systems does the CRS provide for this vehicle? Refrigerant extinguishing system.

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3.

Assignment 4

Specifications of electric trucks from Action: Action opted for the Volvo FM Electric. These are also availab with a smaller 180 kWh battery, but the retail chain opted for the largest option. The power of the electric truc between 450 and 666 hp. With a fast charger, the truck should be able to be fully charged in 2.5 hours. In practice, this means that each truck can supply six to nine shops per day.

Solar panels on the roof: Action will also install solar panels on the roof of the trailers. This is not an exaggerated version of Lightyear's ideas, as these solar trailers are attached to the back of the old diesel trucks. By generating electricity from the sun, the diesel engine doesn't have to work as hard to drive the dynamo. This saves fuel.
The truck uses solar energy for all electrical systems on board, but not for propulsion. According to Action, the panels ensure that emissions per truck per year can be reduced by 4 tonnes of CO2. The fuel saving is 1,200 litres per year per truck. The addition should pay for itself within three years.
This case is fictitious, but it is intended to help you consider what issues are important for such a specific vehicle.

Considerations: How many victims? Is a victim trapped? Can we approach them safely?

How do we secure the situation? Block and stabilise. Discuss the various steps the CRS describes to deactivate this vehicle.

What command is given? Block wheels, deactivate vehicle, use CRS

What tools/resources should be used? Wheel chocks, blocks, the CRS and 1000 volt gloves

What solutions does the CRS provide? Various deactivation methods.

4.

Providing access, solutions and assignmen

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4.1 – Tank cap

4.

Tank cap





Tank caps and recognising the fuel types
You can often determine the fuel type of a vehicle by opening the tank cap. Top right: a diesel vehicle with an Adblue filler cap. Bottom right: the quick release for diesel, there is no longer a loose cap. On the DS, you will probably be surprised if you find a plug connection. The green one bottom left is a petrol car with CNG. The blue one is a hydrogen connection.
Bottom left and top centre are two electrical connections.

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4.

Disconnecting charging cable

Assignment: for a Fiat 500e, look up how to disconnect the charging cable in the usual way and in the alternative way. Then have an MB EXQ 400 searched for to disconnect the charging cable in case of a fault.

Unlocking the charging cable may be necessary if there is a problem with a vehicle that is charging. Below are some options you have to disconnect the vehicle.

There are several possibilities for this. The owner of the vehicle can also help you with this. When a vehicle is at a charging station, the plug cannot be removed.
- When a vehicle is connected to a "granny" cable, it is charged through a 230 volt domestic connection, which you can simply and safely disconnect from the socket.
You need the vehicle key when charging at a charging station. There are several options, sometimes you can press the button in the socket with the key within reach to unlock the charging cable, sometimes you have to unlock the car doors first before you can operate this button in the charging socket.

In the event of a malfunction, there are options via an emergency release cable; see the CRS for this.

For charging stations at home, you can switch off the main switch in the meter cupboard.

For public charging stations, the website laadpalen.nl is an option (depending on the time of day). You may be able to switch it off remotely through the number on the station.
At fast charging stations there is always an emergency stop on the installation.

For charging stations in a car park, you can also think of the shop that has the stations as a service, they also have a distribution box.

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4.

Disconnecting charging cable

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4.

Providing access

4.3 Assignment:

Describe on a piece of paper the different types of doors that are possible in cars and vans.

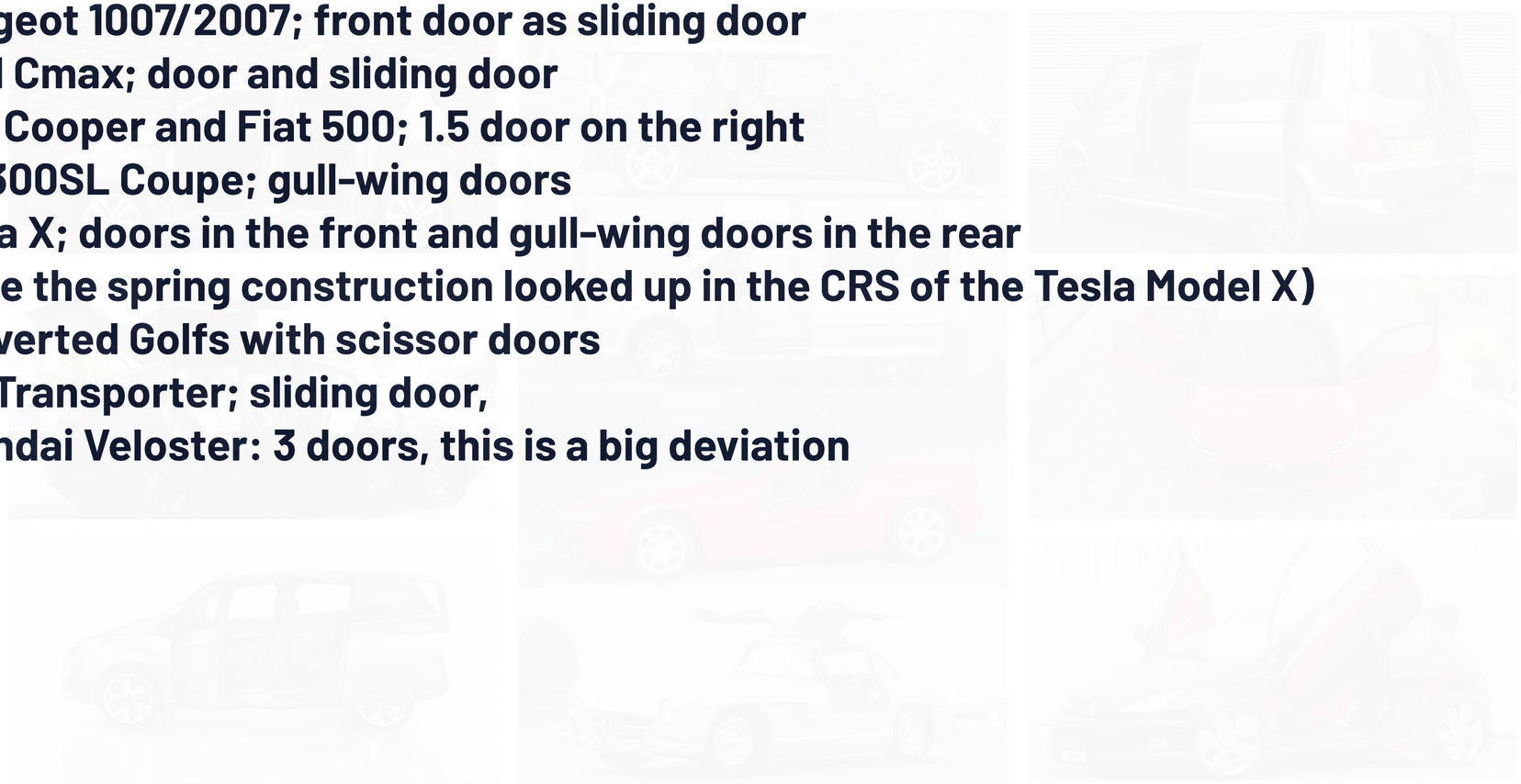
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4.

Providing access

Different types of doors

- BMW Z1; door sinks into the sill
- Opel Meriva; suicide door with B-pillar
- Peugeot 1007/2007; front door as sliding door
- Ford Cmax; door and sliding door
- Mini Cooper and Fiat 500; 1.5 door on the right
- MB 300SL Coupe; gull-wing doors
- Tesla X; doors in the front and gull-wing doors in the rear
(have the spring construction looked up in the CRS of the Tesla Model X)
- Converted Golfs with scissor doors
- VW Transporter; sliding door,
- Hyundai Veloster: 3 doors, this is a big deviation



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4.

Providing access



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4.

Providing access



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4.

Providing access



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4.

Providing access



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4.

Providing access



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4.

Providing access



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Discuss some unusual door handles here. Perhaps the participants know of a few other types?

4.

Providing access

4.

Providing access

4.4 – Different types of door handles

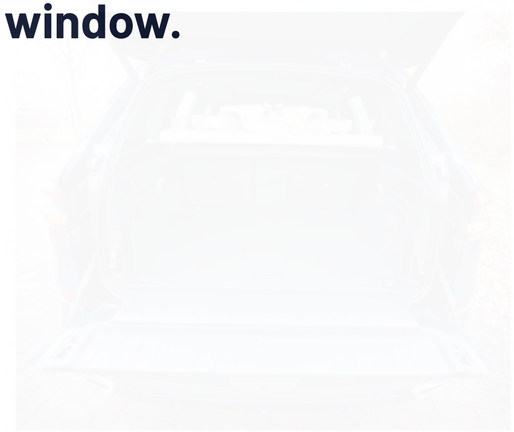
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4.

Providing access

The rear of the vehicle can also often be opened in different ways.

Single and double rear doors, 1 or 2 part hatches and with a separately opening rear window.



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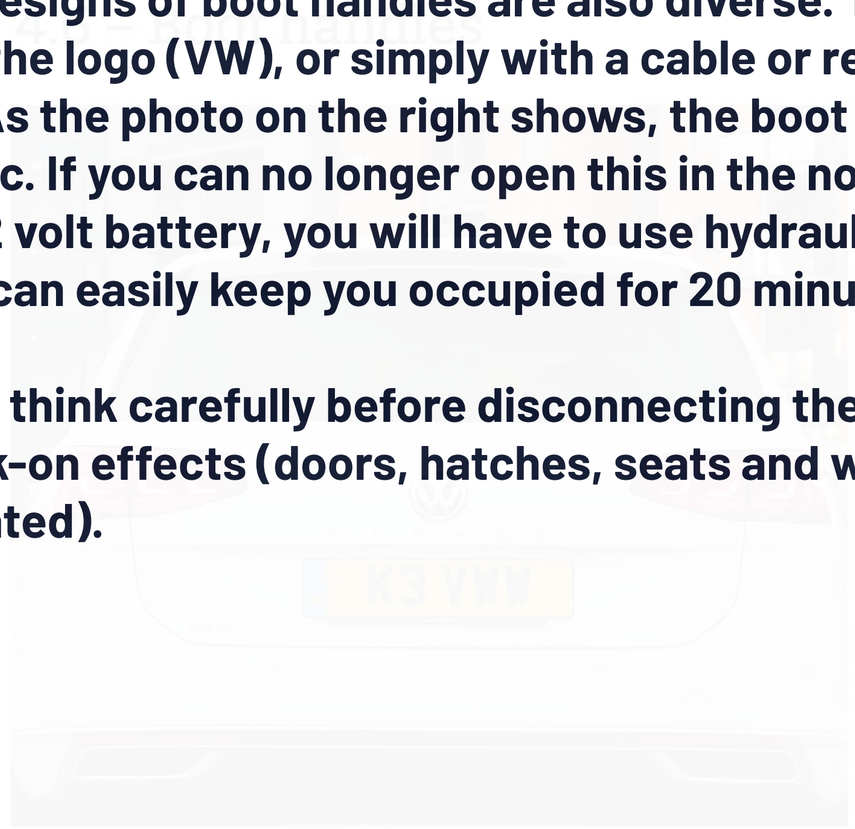
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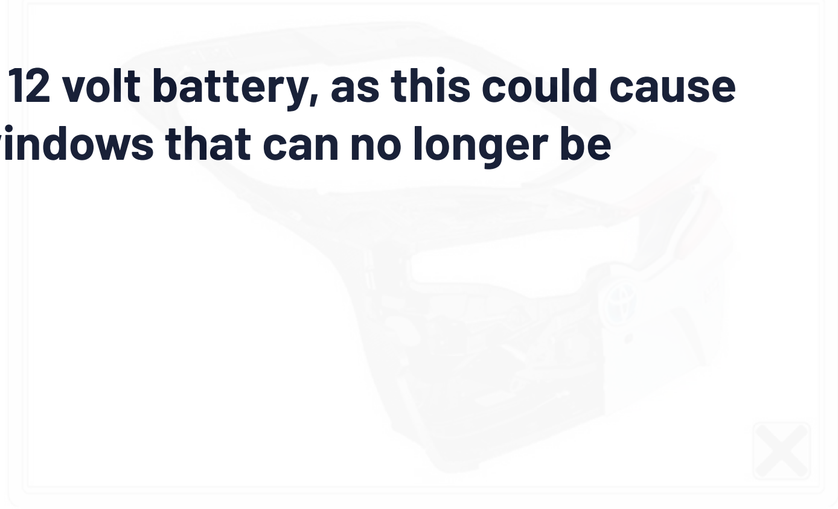
Providing access

Boot handles

The designs of boot handles are also diverse. There are recessed handles, integrated with the logo (VW), or simply with a cable or remote control. Of course, also with a key. As the photo on the right shows, the boot lid is increasingly made completely of plastic. If you can no longer open this in the normal way and you have disconnected the 12 volt battery, you will have to use hydraulic tools. Make no mistake about it, a boot can easily keep you occupied for 20 minutes.

Note: think carefully before disconnecting the 12 volt battery, as this could cause knock-on effects (doors, hatches, seats and windows that can no longer be operated).





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4.

Providing access

Windows and glass types.
To gain access to the vehicle, it is sometimes necessary to remove the glass. This glass has different appearances.

The two most well-known are tempered and laminated glass.

Less common:
Double glazing; exclusive passenger cars, but also trucks
Lexan glass; sports cars, DJI Correctional Institutions Service for prisoner transport, taxis and public transport
Heat-resistant foil/privacy foil; dark foil on the interior of the vehicle. This makes it more difficult to pierce a window from the outside. From the inside this is no problem at all and you can push the glass outwards.
Bulletproof glass; it needs no explanation, this cannot be removed or pierced.

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4.

Providing access

Seats

The number of seats in a vehicle can vary considerably. In passenger vehicles this can involve between 1 and 9 seats. A Mercedes Sprinter in the form of a minibus can even have 15 seats.



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4.

Providing access

Every now and then you come across an incident involving a vehicle that has extensive damage and where you would have expected at least some airbags to have been activated due to the impact.

We have contacted manufacturers about this and they are very diplomatic in their answers, which is logical because of possible claims. There are multiple reasons why airbags may or may not be activated:

The speed must be above 30 km/h and the impact must be in the longitudinal axis of the vehicle with 30 degrees on the left and right (driver and front passenger airbag)
A side collision with impact on the bodywork, or the vehicle rolling over sideways

Some vehicles will stop airbags if no seat belt has been worn.
Damage may have been temporarily repaired and the vehicle is no longer equipped with airbags after previous damage.
The odometer has been tampered with (this is sometimes done for the taximeter in taxis, for example).
It concerns a stolen and converted vehicle, or a vehicle composed of more than one vehicle

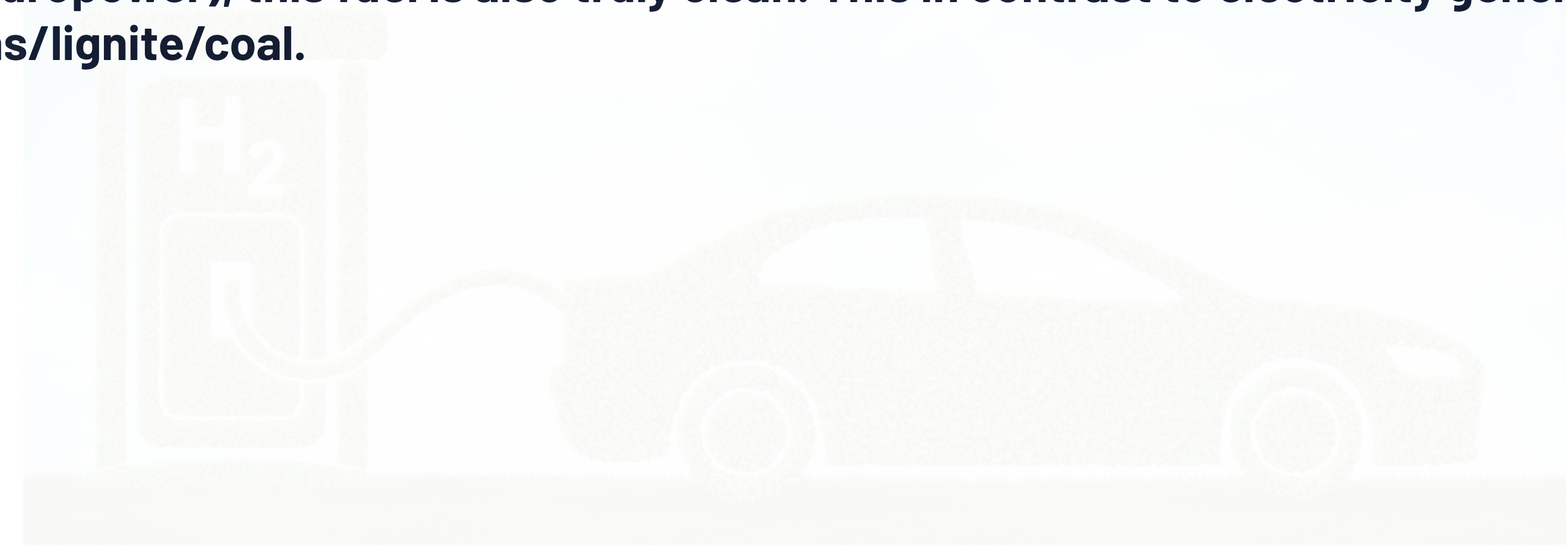
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5.

Hydrogen vehicles

Ask participants where they see the greatest risk in incidents involving an H2 vehicle? Discuss with the group.

H2 has the advantage that if the H2 is also made using green energy (solar/wind/hydropower), this fuel is also truly clean. This in contrast to electricity generated by gas/lignite/coal.



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5.

Hydrogen vehicles

The list of hydrogen production vehicles is now starting to take shape. This means that it is no longer so special to encounter an H2 vehicle. In Germany in particular, the number of hydrogen fuelling stations has grown enormously in recent years, which will also make it possible to drive those vehicles quicker in the Netherlands. It remains a chicken and egg story, without vehicles there will be no H2 fuelling stations and without H2 fuelling stations there will be no vehicles.

Germany is the only European country that currently has more than 100 hydrogen fuelling stations in operation. (reference date: 23 Jan 2023)

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5.

Hydrogen vehicles

Developments in hydrogen-powered vehicles are continuing at a rapid pace. An H2 vehicle requires fewer scarce minerals/materials, as the vehicle runs on H2 and only requires a very limited battery.

In addition to the development of several hydrogen-powered brands, Toyota is also experimenting with a combustion engine that runs on H2. This is nothing new, BMW did the same with the Ottomotor in the 7 series from 2007.

H2 has the advantage that if the H2 is also made using green energy (solar/wind/hydropower), this fuel is also truly clean. This in contrast to electricity generated by gas/lignite/coal.

Have the participants look up the Opel Vivaro e Hydrogen in the CRS, ask them to look up how the 12 volt battery is disconnected.

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6.

eCall

eCall stands for Emergency Call. This safety system in cars automatically contacts the 112 emergency response centre after an accident. It also provides the exact location and the number of occupants. This information enables emergency services to prepare better and arrive on the scene quickly.

After an accident, eCall automatically sends a message to the 112 centre. eCall reports:

- the exact location of the accident;
- the direction of travel;
- the number of occupants;
- the type of vehicle;
- the type of fuel.

eCall can be of vital importance if passengers are unable to call 112 themselves. You can also contact 112 through eCall by pressing a button in the car (manual eCall).

PLEASE NOTE:

eCall reports reach the control rooms in different ways: through the route described above, with vehicle information, number plate, whether airbags have gone off and the exact location. Often also with voice contact to the vehicle and sometimes even contact with the victims.

The second option is the intervention of a kind of private control room; the data that comes in is very limited, often only the map coordinates and the car make and type. In this way, the information for emergency response teams is much more limited.

6.

Assignments

5 - 8

Divide the participants into groups, with 2–4 participants per group. Hand out the assignments and have each group work out the 8 assignments. Allow approximately 20–30 minutes for these assignments; you will notice when the assignments have been completed.

Group 1 covers assignments 1–4 and group 2 covers assignments 5–8.

You can then go through the assignments and answers based on the findings and the following sheets.

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6.

Assignment 5

5: Car versus car

The safety plug/emergency plug can be used to secure a vehicle. Please note: plugging this plug in does NOT deactivate the vehicle. When a vehicle is still turned on and ready to drive, this plug will prevent it from driving away. A “charging cable” is connected after all. The HV batteries are NOT disconnected.

In this specific example, the plug has been plugged in and all front airbags have already been activated due to the collision. The vehicle had already been deactivated by itself (SRS control unit). If you do not have this safety plug available, check the vehicle using the deactivation procedure according to the CRS.

Considerations: What command is given? Block wheels, deactivate vehicle (check), plug in safety plug

What tools/resources should be used? Safety plug

How do we secure the situation? Check vehicle using the CRS, airbags off, is the vehicle without power? Plug in safety plug

What solutions does the CRS provide? Deactivation method if necessary

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6.

Assignment 6

6: Developments
Discuss the specifics of this combination.

Assignments: describe the details that may be important in incidents involving this type of vehicle combination:

In case of a burning vehicle:

In case of a vehicle in water:

In the event of a collision with a person under the towing vehicle:

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6.

Assignment 7

7: Steaming Tesla

Condensation when charging a Tesla:
Early in the morning of Thursday, 16 February 2023, the Haaglanden safety region received a report of a “steaming” Tesla. The Tesla was at a charging station, a supercharger. It had been freezing that night and the temperature was still below freezing. Small clouds of vapour were seen emerging from beneath the Tesla, possibly indicating an unstable battery pack in the Tesla.

The amount of vapour did not intensify. The idea of a fire or thermal runaway was therefore eliminated. Inquiries with Tesla by the safety region have revealed that a Tesla that is charged at a supercharger in cold weather can emit vapour from the front of the car.

So this is not the result of fire, but an effect of fast charging in cold weather. The Tesla battery pack has a heating element that activates when it is cold, causing moisture to condense on the outside of the pack, which can lead to small clouds of vapour.

It is therefore important to know that this mechanism takes place in the cold: it saves a lot of anxiety! So what you see is not always what you think you see. In this case there was no fire: appearances can be deceptive.

What needs to be taken into consideration? What are the possible risks or particular hazards of this vehicle in this situation? If the WBC shows an increased temperature, if noises are audible (popping, hissing), if a strange smell is noticeable, can the charging cable be disconnected?

What command is given? Consider this in relation to WBC and Ex-Ox meter.

What tools/resources should be used? The CRS, WBC, Ex-Ox meter.

How do we secure the situation? What is going on? Question ANWB, Tesla, use the CRS

What solutions does the CRS provide?

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6.

Assignment 8

8: Burning EV
This PHEV caught fire, the battery pack did not ignite. When disconnecting the 12 volt battery, the wrench was most likely placed on the + terminal and then touched the bodywork. The result was a high current from the battery through the wrench, which melted the wrench with many sparks. This causes a high current (high amperage) to flow through the wrench.

Situation:
What needs to be taken into consideration? What are the possible risks or particular hazards of this vehicle in this situation?

What command is given? Disconnect battery terminals

What happened here? The wrench touched the bodywork from the + terminal and created a short circuit

How do we secure the situation? Start with the negative terminal on the 12 volt battery

What solutions does the CRS provide?

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7.

Developments in extinguishing agents and methods

The Netherlands Institute for Public Safety (NIPV) has conducted extensive research into the use of immersion containers and the different extinguishing agents and methods used by fire brigades. In the CRS we cannot include all these different methods under the “Fire” button. The text would be about the size of this document. It is an interesting document that you can download from the NIPV website.

BLIKSUND CRS

7.

Developments in extinguishing agents and methods

The NIPV has made the Energy Transition Scenario Book available.

The Energy Transition Scenario Book contains 24 accident scenarios, including hydrogen, methanol, batteries, biodigester, solar panels and LNG. The scenarios can be used by safety regions, environmental services and area managers to provide advice on the (environmental) safety of energy transition projects.

Link:
https://nipv.nl/scenarioboek-energietransitie-24-scenarios-beschikbaar/

BLIKSUND CRS

8.

Regional and national publications

Police forces and regions regularly conduct and publish research for professional competence purposes. These very useful and educational materials are often widely shared within the fire brigade network.

As examples, here are two incidents as recorded by Gelderland-Zuid.





BLIKSUND CRS

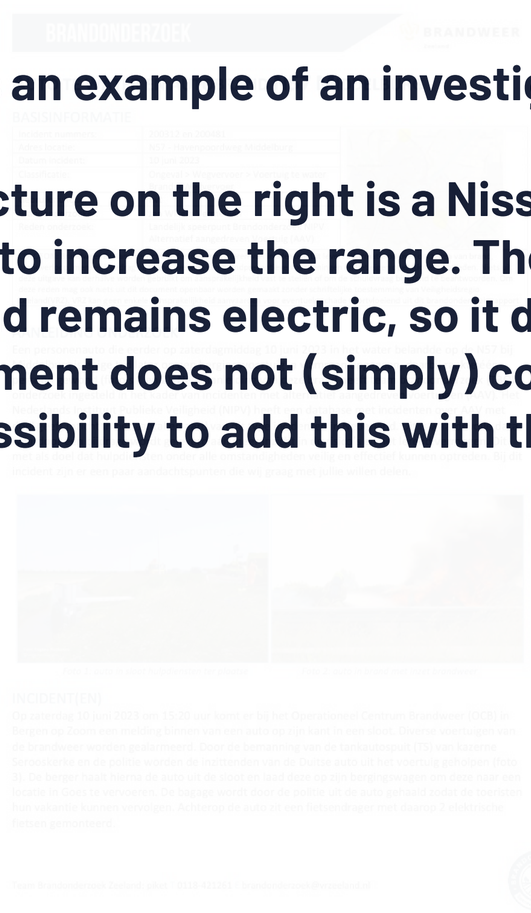
8.

Regional and national publications

Police forces and regions regularly conduct and publish research for professional competence purposes. These very useful and educational materials are often widely shared within the fire brigade network.

Here is an example of an investigation conducted in Zeeland.

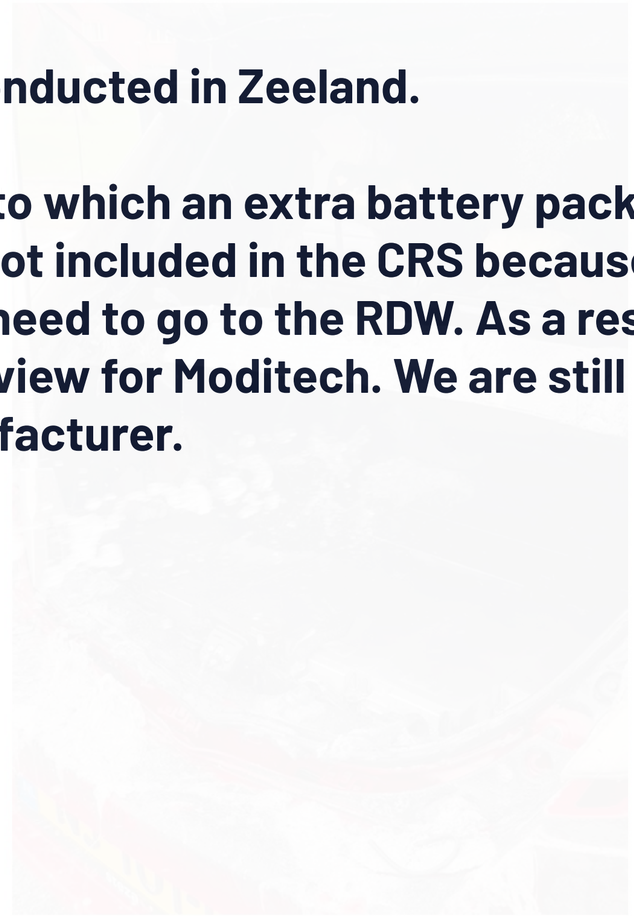
The picture on the right is a Nissan Leaf to which an extra battery pack has been added to increase the range. These are not included in the CRS because the car was and remains electric, so it does not need to go to the RDW. As a result, this adjustment does not (simply) come into view for Moditech. We are still looking into the possibility to add this with this manufacturer.


BRANDONDERZOEK

BRANDWEER

BASISINFORMATIE

INCIDENTIEN



BLIKSUND CRS

8.

Example from previous CIP training course

During the CIP of 2022, we discussed the explosive charge from steering wheels and passenger airbags, the so-called pyrotechnic charge. In this short video you can clearly see that a flashover is created during activation.



8.

Example from previous CIP training course

This short film shows the activation of the pedestrian protection system (PPS) of a Opel Insignia.

The hood rises 12–13 cm. It acts as a safety net for a cyclist or pedestrian.