

# What I need to learn

## Driver's license class B96 / BE

This booklet is intended to give you an introduction to how to drive with a heavy trailer, and preparations before driving. It is based on the official regulations for the driver education, and thus aims to prepare you for what skills and knowledge you need when taking the driving test for class BE.

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# Briefly about the drivers' training course class B96 / BE

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The main objective of the training course in class B96 and BE can be found in section 12-1 of the Traffic Training Regulations. It reads as follows:

## § 12-1. Main goals for driver's license class BE

After completing the traffic training in class BE, the student shall have the competence necessary to drive a car with a trailer in a responsible and safe manner.

The student should have the knowledge, skills, self-awareness and risk understanding, which is necessary to drive in a way that:

- Is safe
- provides good collaboration
- leads to good traffic diversion
- takes into account health, the environment and the needs of others
- complies with current regulations.

The training for B96 and BE is the same, the only thing that distinguishes is a practical driving test to acquire class BE.

The trailer training course aims to raise awareness of the particular dangers when driving with a heavy trailer. For many people driving with a trailer might feel no different than driving without, with some extra challenges when reversing. But fact is that with class BE, you can drive car + trailer with a total weight of up to 7,000kg – twice of what you can do with class B.

Much of the training is about knowledge and routines for securing cargo, controlling the trailer's technical stage and rules around trailer driving. But of course, a lot is also about practical driving with a trailer.

Important aspects of towing – as with any other driving – are to make driving as smooth and comfortable as possible. This is both to improve flow (and improve traffic diversion), to drive more environmentally friendly (eco-driving) and also to improve road safety. To achieve this, it is absolutely necessary to be able to plan your driving, and it is also something that we practice in the practical training.

Furthermore, the practical training is about understanding space requirements of the trailer when driving on narrow roads, understanding how to use gears, engine power and engine breaking the best way possible, reversing with and without helper, using mirrors correctly and so on.

The content of the training can be read in full, in the curriculum for driver's license class B, B code 96 and BE. (Norwegian Road Directorate, 2016).

# Connecting the trailer

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It is expected that the candidate will have good control over the reversing against the trailer, and that the connection process should take place in the "safest possible way".

1. Back the car slowly until the car (towing hitch) is **0 – 30cm away from the trailer** (Trailer coupler). Feel free to get out of the car when you start approaching to check the angle and distance to the coupler. TIP: Check once too much than once too little! Reversing the car into the trailer will cause automatic fail on a driving test.
2. When you are satisfied with the position of the car, **turn the engine off but leave the ignition on and turn on the parking light**. This is so that the trailer light is switched on as soon as you plug in the wiring harness.
3. **Connect the trailer's power connector to the car**. This should be connected *before* doing anything else. This is to get the trailer light on right away, so that other traffic becomes aware that the trailer is "in operation". The cable should hang loosely between the trailer and the car, but make sure that it does not touch in the ground.
4. **Attach the trailer safety wire to the vehicle towbar**. Either in its own fastening point, or throttled around the ball on the towing hitch. Feel free to check also the wires fastening on the trailer. The wire must be in a straight line between the trailer and the vehicle's fastening point.
5. **Lower the trailer coupler down onto the hitch ball and check that the coupler has gone properly into lock**. It should make a click sound when the coupler locks. Visually check that the ball coupling is locked and feel physically after the coupling embraces the ball. *NOTE! If the coupler does not settle naturally onto the hitch ball, it may be necessary to loosen the parking brake on the trailer to create some movement in the coupling. This is because the trailer coupler can get "stuck" on the ball in the wrong position, and it will not lock unless you give it some room for movement.*
6. Lift the nose wheel of the trailer as high up as possible and lock it in a way that prevents movement.

# Daily control of the trailer

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It is expected that the candidate will be able to carry out a systematic and effective check of the trailer, before starting the drive. At the Class BE driving test, this inspection is expected to be carried out on its own initiative.

The purpose of the daily control is to make sure that the trailer is in proper condition. What to check is, in short:

- Trailer lights and reflectors (Including: rear light, turning indicator, brake lights, sign lights and hazard signal lights).
- The trailer's wheels and shaft(s). (Including: Air pressure, tyre or rim damage, wheel bearings, axles, etc.).
- Trailer load – is it properly secured?
- Trailer parking brake and driving brake.

## Daily control of the trailer, effective order.

1. Turn on the vehicle's ignition or motor and turn the light switch to the park light position.
2. Turn on the indicator on the left.
3. Check the trailer's left marking light (white light on the front).
4. Check the trailer's left wheel and shaft(s). (Air pressure, pattern depth, wheel bearings, bolts).
5. Check the trailer rear light, sign light and left indicator.
6. Check the right wheel of the trailer and shaft(s). (Air pressure, pattern depth, wheel bearings, bolts).
7. Check the trailer's right marking light (white light on the front).
  
8. Open the trunk and get the warning triangle box, snow broom or similar.
9. Place the warning triangle box between the brake pedal and the driver's seat – to light the brake lights.
10. Turn the light switch to position "0" and turn on the vehicle's hazard lights.
11. Check that the hazard lights and brake lights are working.
12. Turn off the hazard lights and remove the warning triangle box. Turn off ignition, bring the key out and lock the doors of the car.
  
13. Open the trailer and check that the trailer load is properly secured.
14. Check the trailer's fastening points, walls, etc.
15. Check for and remove snow and ice on the roof (if applicable).
  
16. Start the engine and try to drive (gently) forward with the trailer parking brake on, you should now feel that the trailer is stopping the car from moving.
17. Take off the trailer's parking brake and find a stretch where you can test the trailer's operating brake. This is done by braking *gradually but* determinedly from a speed of around 40 km/h. If the operating brake does *not* work, you will feel the trailer pushing the car forward.

# Safety check of the car and trailer

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Where the daily control is something the candidate should carry out on his/her own initiative, safety control is a somewhat more thorough control or explanation of different laws and regulations the candidate should have knowledge of. Including rules on:

- Car and truck load restrictions
- Tire size and carrying capacity (Load Index – "LI").
- Awareness of forces when driving with heavy loads (turning force / braking force)
- Requirements for visibility and mirrors
- Load securing requirements
- Knowledge of protruding goods
- Other

It is important to emphasize that the candidate is expected to have knowledge about this. There is no theory test for class BE – so the practical test will both measure the candidate's theoretical knowledge in addition to the practical driving skills.

## Safety check of car and trailer

1. The candidate should know the car and the trailer's weight restrictions. The candidate should also know the weight limitations that follow from the different driver card classes (B, B96 and BE).

Car and trailer weight restrictions can be found in cars and trailers' vehicle cards:

The image shows two vehicle cards side-by-side. The left card is for a car and the right card is for a trailer. Both cards are titled '8. Vekter (kg)'. The car card lists various weight limits for different categories (F.1/F.2, G, F.3, O.1, O.2). The trailer card lists weight limits for categories (F.1/F.2, G). Some values are highlighted with colored boxes: blue for total weight, red for axle weight, and green for coupling weight.

8. Vekter (kg)	
(F.1/F.2)	Tillatt totalvekt : 1940
	Tillatt aksellast : 1060 / 930
(G)	Egenvekt med fører : 1471
	Tillatt nyttelast inkl. passasjerer : 469
(F.3)	Tillatt vogntoqvekt : 3695
(O.1)	Tillatt hengervekt, med brems : 1700
(O.2)	Tillatt hengervekt, uten brems : 730
	Tillatt koblingslast : 80
	Tillatt taklast : 80

8. Vekter (kg)	
(F.1/F.2)	Tillatt totalvekt : 2000
	Tillatt aksellast : 1000 / 1000
(G)	Egenvekt : 690
	Tillatt nyttelast : 1310
	Tillatt koblingslast : 100

(Car)

(Trailer)

Based on the vehicle cards, you can read the following information:

- The trailer pulled behind this car can weigh a maximum of 1700kg incl. load if the trailer has its own operating brake, 730kg if no operating break (Car's vehicle card, Red Frame).
- The trailer itself weighs 690kg and can be loaded with 1310kg (Trailer's vehicle card, red frame).  
*Note! This means that the trailer cannot be loaded fully if it is pulled with this car.*

- The maximum connection load between the car and the trailer is 80kg. (Car and trailers' vehicle card – green frame. Lowest number applies). Koblingslast = ball pressure from the trailer vertically on the towing hitch.

You can also read in the vehicle cards that you need class B96 or BE to pull the trailer with this car, regardless of the trailer's current load.

**Reason:** The driver's license class you need depends on the car and the permissible total weight of the trailer (blue frames). In this case, the sum of the permissible total weight of the car and trailer is 3,940kg. This is above the class B weight limit (3,500kg "with exceptions"), but within the class B96 (4,250kg) limit, and within class BE (trailer max permissible total weight 3,500kg).

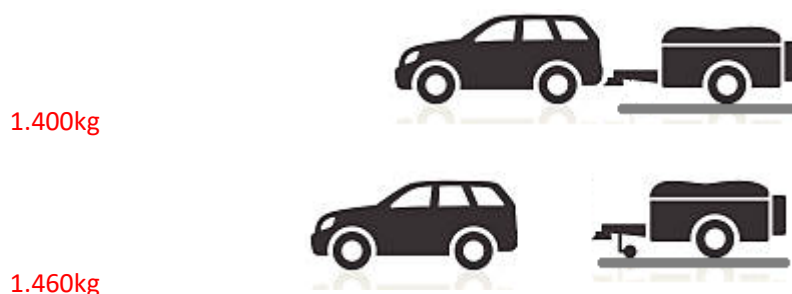
For more information about this, please read **sections 3-5 and 3-11 of the Driver's License Regulations.**

**2.** The candidate should be able to measure the trailer's current weight, coupling load and the weight of the freight.

To measure the current weight of the trailer, the trailer is driven on the road scale and you can read the current weight. Important to note that to get 100% the correct weight, the trailer must be disconnected from the car and the nose wheel of the trailer must be lowered down on the road weight. This is because some of the trailer's weight will naturally "rest" on the vehicle's towing hitch when connected.

Similarly, you can find out what the coupling load/ball pressure is.

The trailer is driven on the road scale and the weight of the trailer is read while it is still connected to the car. Then you disconnect the trailer off the car, lower the nose wheel so that it rest on the scale, and read again the weight of the trailer. The weight should then have increased – and the difference will be the coupling load.



= The current weight of the trailer is 1,460kg. Coupling load is 60kg.

To find out the weight of the freight, the trailer weight (690kg) is subtracted from the trailer's measured weight. The difference will be the weight of the load.

Freight weight: 1,460kg – 690kg = 770kg.

On a driving test, the candidate should be able to describe how this can be measured. If the description is not good enough, the candidate may be asked to carry this out on the road scale on the traffic station.

3. The candidate should understand and be able to explain the consequences of driving with too heavily loaded trailer.

Possible consequences can be: affects the driving characteristics; Poorer steering; Longer braking distance (car and trailer brakes not designed for such heavy loads); Risk of visual glare to others in case of too heavy coupling load; Illegal - fines and other sanctions.

4. The candidate should be able to check that the tyres are of the correct tyre dimension, have the correct carrying capacity and are in good condition.

The correct tire dimension and carrying capacity requirements, this can be found in the trailer's vehicle card, item 12:

12. Aksler / dekk / felger						
(L)	Antall aksler	:	2	Min innpress	Maks sporvidde	Min hast
Aksel 1:	Std. dekkdimensjon 155 R 13	Std. felgdim	4 1/2	Min. LI	1820 mm	J
Aksel 2:	155 R 13	4 1/2	84	84	1820 mm	

One can read here that the standard tire dimension is 155/R13. (Green frame).

Furthermore, it can be read that the minimum requirement for the tyre's carrying capacity (LI – LOAD INDEX) is 84 (Red frame). This corresponds to 500kg. Please note that this applies to each tyre.

You then must compare this with the tires on the trailer to check if the requirements are met.

It is important that the trailer tire dimension matches the dimension of the vehicle card, as driving with too large or too small tyres may affect the effect of the trailer's brake. Requirements for the ball height of the car are that the center of the ball should be between 35 – 42 cm above the ground when the car is fully loaded (Towbar Directive, R55).

The candidate should also check the condition of the tire (wounds, cuts, injuries, etc.), and the pattern of the tires (pattern depth, wear, etc.).

5. The candidate should be able to explain the requirements for a view in the car's mirror.

The requirements for the vehicle's mirror can be found in **Section 30-1 of the Vehicle Regulations**.

The basic requirements is as follows:

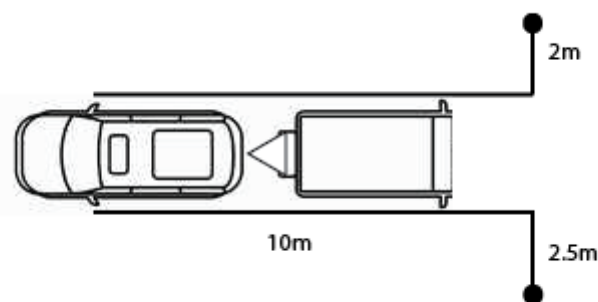


In the case of both loaded and unloaded vehicles, the mirror must provide such a field of view that the driver, even when the driver's seat is in the rear position, can see the road

a) on the left side at a width of at least 2.5 m at a distance of 10 m behind the mirror and further back as far as the eye reaches.

b) on the right side at a width of at least 2 m at a distance of 10 m behind the mirror and further back as far back as the eye reaches.

Note that when the trailer width is more than the car, the width outwards should be measured from the side of the trailer. Therefore, for example, when pulling a caravan, the car must often have additional side mirrors.



There are also requirements for at least one mirror to provide such a field of view that the trailer can be seen. If the trailer is equal to wide or wider than the tractor, at least both sides of the trailer should be seen in the exterior mirrors.

6. The candidate should be able to explain the requirements for securing the load.

The requirements for securing load can be found in **sections 3-2 and 3-3 of the Regulations relating to the use of vehicles.**

The most important rules state that the load shall be "as evenly distributed as possible on the wheels and axles of the vehicle", and that the load securing shall withstand forces equivalent to 1.0 times the weight of the load in the direction of travel, 0.5 times the weight of the load sideways and towards the direction of travel. Furthermore, the load securing shall ensure that the load can "only minimally change position" and that it should not be able to pour or tip over.

There are also rules for the load to: not to interfere with other road users; should not fall off the vehicle; do not smoke, dust, unnecessary noise or be a nuisance to the surroundings.

7. The candidate should be able to describe the most common load securing methods and explain how the load of the trailer is secured.

**Section 3-3 fourth paragraph of the Regulations relating to the use of vehicles** states that the goods shall be secured by "locking, blocking, using load securing straps or combination of these methods". Other

methods can be accepted if it can be proved (by calculation or practical test) that the method used meets the requirements for securing the load, as mentioned in the previous point.

**8.** The candidates shall be able to describe the rules for load overhanging, and how to correctly mark this.

Rules for overhanging goods can be found in **section 3-4, first point, of the Regulations relating to the use of vehicles.**

The limitations that need to be remembered are as follows:

Overhanging goods in the side direction: Max. 15cm (*NOTE! The total width must not exceed 2.55 meters*).

Overhanging goods in front of the vehicle: Max. 1.00 meters.

For overhang beyond this, permission must be sought from the regional road office.

Note that there are separate rules when driving with a boat trailer. (No 15cm rule for overhang at sides). Also note that plates (e.g. plasterboards) should not protrude outside the sides of the load carrier in the width direction anyway, ref. **§3-3 seventh point.**

Rules for marking of overhanging cargo can be found in **section 3-4 second and third paragraphs of the Regulations relating to the use of vehicles.**

In short, the rules state that:

Goods that extend beyond the sides of the vehicle shall be marked "*in dark or bad/hazy weather*" with two headlamps that give white light in front, and two headlamps that give a red light at the rear. This applies if the goods are within the limit as mentioned above (15cm). If the goods go outside the 15cm limit, fluorescent markings with alternately red and yellow stripes must be used at all times.

Goods that extend out in front of the vehicle, or more than 1.00 meters behind, must be marked at the outermost with an alternately red and white device. The red material should be light reflective. In "*dark or bad/hazy weather*", goods protruding more than 1.00 metres behind the vehicle must also be marked with a light that gives a red light backwards and to the sides.

*NOTE! It is recommended to read the rules around securing and marking goods carefully, as there are many exceptions, special conditions etc. As noted before, this is something you might be asked to explain on your driving test.*

**9.** Checking the safety wire and trailer coupling.

The candidate should be able to control and explain the function of the trailer safety wire.

When controlling the wire, you should check the condition (if there are wounds, rust, chipped up, etc.), and the fastener of the trailer parking brake.

The candidate should also understand the purpose of the safety wire. Some believe that the purpose of the wire is that the trailer should still be pulled after the car if the trailer's coupling loosens off the towing hitch. This is wrong.

The purpose of the safety wire is for the parking brake to be applied if the trailer is lost off the towing hitch, then the wire should break.

When controlling the trailer coupling, the candidate should check that the coupling and fastening are in good condition. For example, when a removable towbar is fitted, is this securely fastened? (Green field etc.).

**10.** The candidate should know the requirements for getting good friction on winter roads.

As with other vehicles, the trailer must also be equipped with tyres that ensure the best possible grip in relation to the road conditions. This means, if necessary, winter tires with or without spikes (friction tires).

# Driving with a trailer

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This section of the booklet deals with practical driving with trailers. You also get some tips and advice to make your driving safer, more efficient and in line with expected driving behaviour on the driving test.

## Reversing

Where some drivers master reversing with a trailer quite good, others find it challenging. It is probably not only about experience, but also about understanding the trailer movement in relation to how the car turns. When reversing with a trailer the speed should be no more than walking speed, and if the visibility is bad, you should consider using a helper.

When reversing, it is important to understand how turning the wheels on the car affects the movement of the trailer, both direction and how much. A common problem is that the movement on the trailer will be more than what the driver intended, and when the driver then tries to correct the trailer while reversing further, the trailer is already well on its way out into the ditch. It must be understood that if the trailer has first started to "run away" to the side, it takes many meters to straighten the trailer while reversing (Fig. 1). It often is better to drive a few meters forward to re-align the car and trailer – and thus also avoid ending up off the road.

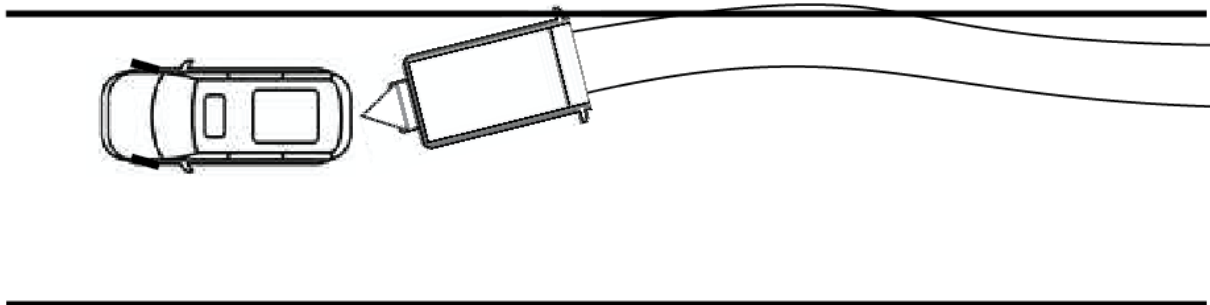


Fig.1. If the trailer has begun to make a significant movement in an undesirable direction, it takes a lot to get it back on track.

It is also important to understand that the trailer "by nature" will attempt to swing out to the side if there is a slight difference in angle between trailer and car – no matter how small it is. Even if the wheels on the car are straight – the trailer will not necessarily reverse straight back. A tip here is to observe the sides of the trailer in the side mirrors of the car. If it is to be reversed straight back – you should see the same amount of the trailer's sides in both mirrors. If you start to see more of the trailer's side in one mirror, you have a movement to that side that will be amplified unless you correct with the steering wheel. (Fig. 2). The earlier you correct, the less steering wheel layer you need to correct – and the straighter the reversing.

You can take advantage of this if the road you are going to reverse makes a gentle turn. Then you should – when the trailer enters the turn – see a little more of the trailer's side in the direction in which the turn is going.

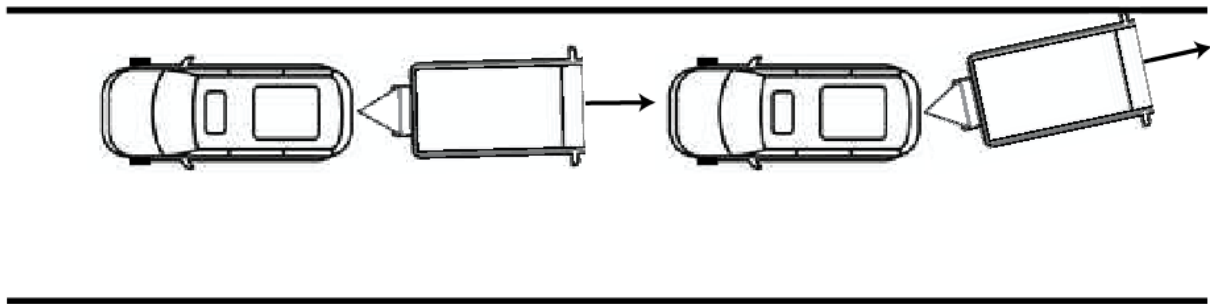


Fig.2. If the trailer first starts to "run away" to the side, this will quickly deteriorate.

When reversing into another road (e.g. at intersections / into the exit / parking lot), the goal is to give the trailer just enough turning-angle to enter the road – then keep this angle during reversing. The challenge here often lies in the fact that the trailer can quickly turn too much – the trailer thus has an angle that will be impossible to straighten out by further reversing ("Critical trailer angle"). This is also called jack-knifing. A short trailer reaches its critical angle before a long trailer – it can therefore be more challenging to reverse with a short trailer. (Fig. 3 -4). (Read more here: <http://www.mills37.plus.com/Jack-knife.pdf>).

It is not necessarily wrong that the trailer turns past its critical angle – but you as a driver should understand that sooner or later you will have to drive forward to straighten the car + trailer.

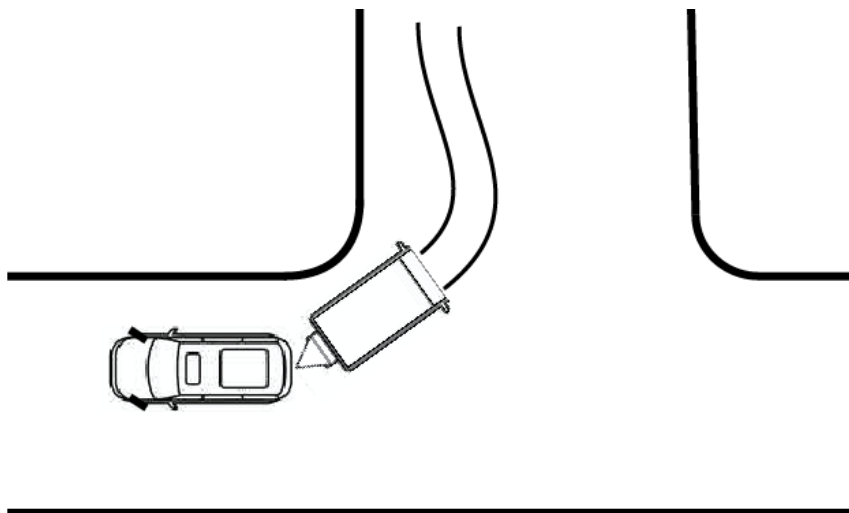


Fig. 3. Keep the trailer within its critical angle.

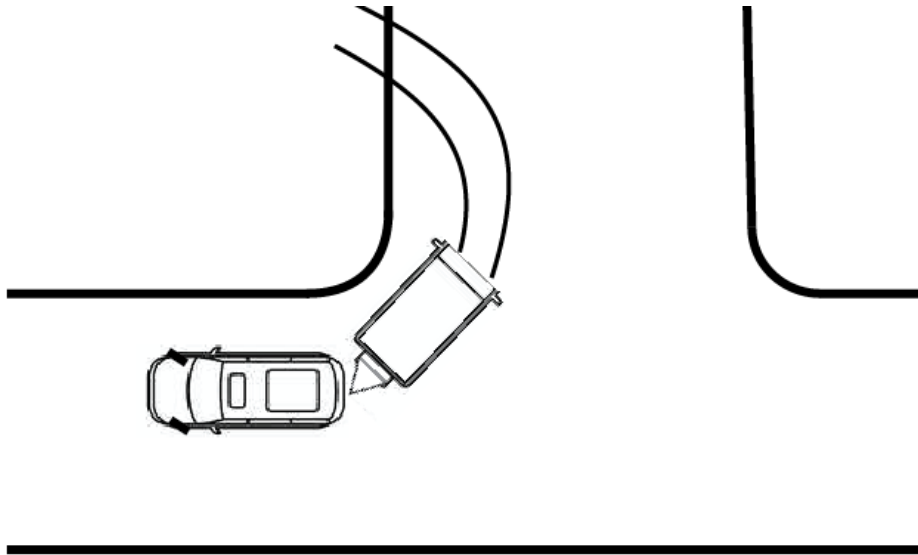


Fig. 4. Here the trailer has gone past its critical angle – straighten while reversing is impossible!

## Economical driving

Eco-driving is a collective term for all the measures that drivers can take to reduce fuel consumption. This is important to master – as economical driving **requires** good planning and prediction of the driver. This will also make your driving safer, easier to understand for other drivers and provide better flow – in addition to reducing fuel consumption.

Economical driving is really about two things:

One is to use the car's engine power correctly, including using the right gear (High gear in case of low power requirement, low gears in case of a lot of power needs), and understanding the vehicle's motion energy / torque / engine brake, etc.

The second is to plan the driving to such an extent that one avoids unnecessary stopping, abrupt braking, abrupt accelerations, etc. It **should not** be necessary to stop completely because you have to give way to other cars, have to give way for a pedestrian and so on. If your driving is characterized by that you often have to stop completely and abrupt when you have to give way to other traffic, it may be a sign that you should plan your driving better (see Fig. 5 and Fig. 6.)

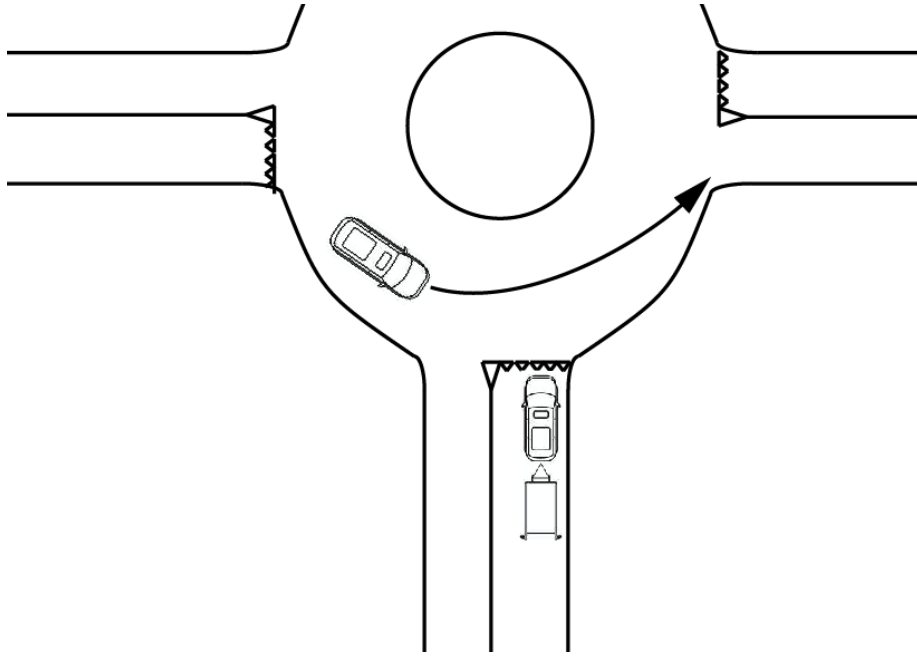


Fig. 5. It should not be necessary to stop completely because you must give way to other traffic in the intersection / roundabout.

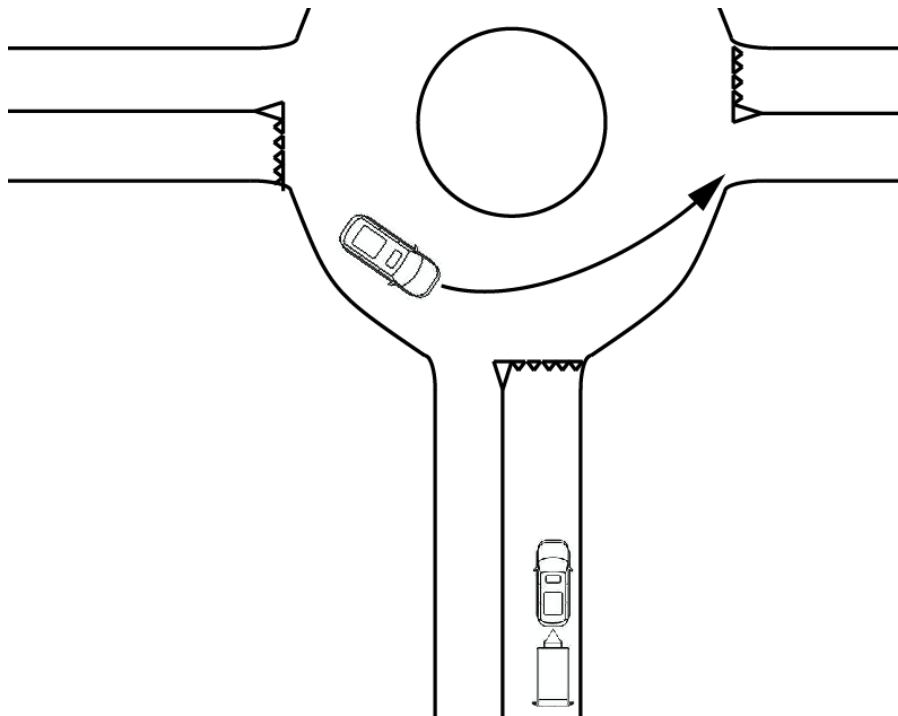


Fig. 6. By withholding earlier (Delaying your driving), you will be able to give way without stopping completely. This is more economical, creating better traffic diversion and better flow. (And also more demanding on you as a driver).

## Position in the lane

The candidate is expected to have a good relationship with his/her own position in the lane. Traffic rules state that the vehicle should be carried on the right side of the road. A common problem when driving on roads at a higher speed is cutting corners – that one lays close / on the center line in the left turn, and close / on the border in the right turn. This is also seen in practice – as road markings in corners often wear away after a few years.

Pay attention to narrow country roads (with dashed border). Especially when driving with a trailer that is wider than the car. It may be necessary to use the road shoulder when meeting other traffic. In this case, the speed must be so low that you have full control over the position of the trailer. It is **not** OK to meet other traffic at 60+km/h with 5cm clearance to the roadside / oncoming car.

You should also be aware of your positioning in intersections and roundabouts. One tip here is whether you are going straight ahead, right or left at intersections or roundabouts, you should place the car to the right or left early – preferably 50-100m before. This is to clarify to other road users where you are going, thereby creating better interaction. Remember: Going straight in a roundabout, you should position the car in the right lane (or at the right side if there is not two marked lanes). Unless there is no road going to the left – then you should position the car in the left lane (or left side if there is not two marked lanes).

## Other

Beyond what is mentioned earlier in the booklet, you may want to consider the following points when taking the trailer training:

- Steering wheel grip. You should have as balanced steering wheel grip as possible.
- Use of indicator lights. Many people are good at using indicators – but do you use it early enough?
- Use of mirrors. The requirement is that you should always be in control of the traffic behind you. Especially note in intersections / roundabouts, do you get traffic on the side of you? Post-check by turns/intersections/roundabouts. Control at the back of the road, do you have traffic at the back that's going to overtake you?
- Do you have good enough lane change routines? Early indicator, steady driving while checking mirror/ blind spot. Remember that you need extra distance to the traffic behind you when changing lanes – since you with a trailer are twice as long as without.
- Remember special speed limits when driving with a trailer.
- Overtaking people – do you have enough distance to make it feel safe for those you drive past?
- Overtaking parked cars – do you have enough distance to prevent danger, if the doors open / There are people between the cars?
- Right hand rule – are you at all times aware whether the road you are driving on is a priority road, or got the right hand rule, and if so are you prepared to give way to traffic from the right in the intersections?