



ESDS Tactical Response Guidelines

Emergency Services Driving Standard



Óglaigh
na hÉireann
DEFENCE FORCES IRELAND



An Stiúrthóireacht Náisiúnta um Dóiteáin agus Bainistíocht Éigeandála
National Directorate for Fire & Emergency Management



Údarás Um Shábháilteacht Ar Bhóithre
Road Safety Authority

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Introduction

This document seeks to reduce the risks associated with emergency response driving by setting out a consistent tactical approach for Emergency Service Vehicle (ESV) drivers to implement the Emergency Service Driving Standard (ESDS) level 3.

The responsibilities borne by ESV drivers are considerable. Any momentary relaxation of concentration can produce grave results, endangering the safety of the public and member alike.

ESV drivers must be aware that:

- The prime considerations are the safety of the public, their colleagues and themselves.
- There are NO circumstances when responding to an emergency that can justify actions, which lead to death or injury of any person.
- Any use of legal exemptions must be safe and proportionate to the existing circumstances.
- If they fail to get to the location of the call they have failed in their primary task.
- They may be subject to investigation and subsequently to criminal or civil prosecution for their driving actions.

The tactical guidance while not definitive to any existing circumstance will set out consistent standards for emergency response driving, where the risks to the public and to emergency service personnel must be carefully managed and properly balanced against the objectives to be achieved.

Emergency response is defined as driving when using any of the exemptions afforded by the relevant legislation, and/or the use of emergency warning equipment to facilitate progress.

An **emergency service vehicle** is a vehicle authorised to have emergency lights and sirens fitted under current road traffic legislation.

An **emergency service vehicle** (ESV) driver is described as a driver of an emergency service vehicle.

Response criteria

Before engaging in an emergency response, ESV drivers must ensure compliance with any organisational criteria and give consideration to the following:

- On the information available does the incident require an immediate and urgent response?
- Does the prevailing road, traffic or weather conditions influence the use of the warning equipment?
- What distance is involved, is there another unit closer or at the scene?
- Is the vehicle suitable for emergency response?

The ultimate decision to utilize equipment or avail of any legal exemption, if applicable, lies with the ESV driver and all actions must be justified, accountable and proportionate.

Use of emergency lights and sirens

Emergency lights and sirens are primarily used to:

- Provide advanced warning to other road users.
- Most road users on seeing or hearing the warning of an approaching emergency service vehicle will try to give precedence. However, the use of emergency lights and sirens gives no protection or right of way. ESV drivers may take advantage of any precedence offered to them by other road users, but only if it is legal and safe to do so.

Unwarranted use of emergency lights and sirens can undermine their value. It should never be assumed that emergency lights and sirens will be seen or heard by other road users.

Sirens

- ESV drivers should assess when and where to activate emergency equipment. In normal circumstances emergency lights should be activated before sirens.
- When in close proximity to other road users, particularly cyclists, pedestrians or animals, careful consideration should be given before activating sirens.
- Following a risk assessment by the ESV drivers, if it is decided not to use the sirens (e.g. 'silent approach') extra care must be taken, as other road users may not be aware of the ESV's presence.
- When sirens are being used, a change of tone receives attention from other road users. The use of a long tone between hazards is appropriate; however, changing to a different tone on the approach to a hazard is likely to maximize the benefit of the warning.
- When driving in convoy or following an emergency service vehicle, a different tone to the lead vehicle should be used. While other road users may react to one vehicle, they may not expect a second or third vehicle.
- Consideration should be given to switching off the siren in stationary traffic. This often takes the tension out of the situation and gives other road users time to consider how they might assist the ESV's progress.

Alternating headlights/white LED repeaters

The alternating headlights/white LED repeaters on most ESVs use an alternating flash pattern and increases the likelihood of being seen. However, their use may also create the risk of dazzle to other road users and reduced visibility for the ESV driver and should not be used during hours of darkness.

Emergency lighting

Some vehicles have both rotating and/or strobe lights. Strobe lights are particularly effective on multi lane roads such as motorways, but may only show to front or rear. ESV drivers must consider all the lighting arrangements fitted to their vehicle and understand the advantages of their use. Example - front wing emergency lights can increase visibility to other road users when emerging at a junction.

Route planning

When undertaking an emergency response, ESV drivers must have the understanding and skills to plan the response route giving regard to safety, vehicle characteristics, road surface, weather, traffic conditions and any anticipated hazards. The ESV drivers must also have the competence to dynamically adjust a route when presented with unforeseen hazards or situations.

Basic principles of response driving

The following principles should be applied to approaching road users to minimize the risk to all road users, while ensuring the delivery of a prompt emergency response:

1	Restraint Hold back from traffic in front giving road users time to see you and plan their drive. The position taken by the ESV combined with signals will give a clearer picture of the intended path.
2	Reaction Wait for the road user in front to react to the presence of the ESV. Emergency lights and sirens can be difficult to see or hear even from close range as road user may be preoccupied with the road ahead or what they may be listening to a radio or telephone.
3	Respond When the desired reaction from the road users in front occurs, be prepared to respond promptly. Delay may cause confusion and a change of mind by the road user. Never take it for granted that all road users will react similarly. Always anticipate the unexpected.

Speed limits – safe progress

While a statutory exemption may exist from speed limits, ESV drivers must be able to stop their vehicle within the distance that they can see to be clear.

While undertaking emergency response, ESV drivers must never compromise safety in order to save time. It is far better to arrive later, than not at all. ESV drivers should be mindful that exceeding the speed limit or inappropriate speed may result in an adverse public perception of response driving and their respective service.

The following diagram demonstrates the need to always correctly assess the appropriate speed. In the scenario shown the ESV is travelling at 50kph approaching the rear of a parked lorry which is 9 meters long. As the ESV passes the rear of the truck, a pedestrian walks from in front directly into the path of the ESV. The ESV driver will only have sufficient time to start to brake as the ESV strikes the pedestrian (Figure 1).



Figure 1

Approaching traffic light controlled junctions

When negotiating red lights they should be treated as STOP and / or GIVE WAY. No attempt should be made to proceed unless the ESV driver is sure that the way is clear and no other road user will be endangered or forced to take extreme avoidance action.

When approaching traffic lights, ESV drivers must gather information in respect of the road layout and consider the movements of other road users both seen and unseen. Consideration should be given to 'holding back' on the approach to the junction in favour of a green light to reduce risk especially at busy or complex junctions.

Risk assessment must not only include the red light phase but also the green light phase. This is important; the speed of approach must enable the ESV driver to stop if necessary should the traffic light signals change, or if another responding ESV is negotiating the junction from a different approach.

On the approach to traffic lights the ESV driver should adopt a position that ensures the best view. The ESV driver should select the least obstructed path with due regard to safety and to maximise a visual presence.

The position and movement of all traffic should be assessed on the approach. When safe, the ESV driver should proceed at a speed that will enable observations to be maintained and allow the vehicle to stop. Particular attention must be paid to the presence of pedal cyclists and motorcyclists who are vulnerable and difficult to see amongst other vehicles.

If the entry speed into the junction is too high, other road users may over-react (excessive braking/steering) which could result in a 'shunt' type collision (Figure 2).



Figure 2

When exercising the exemption to pass a red traffic light, ESV driver actions should avoid causing another road user to contravene the red light. Remember that other road users do not have any exemption in law to contravene red traffic lights.

If an ESV approaches a set of red lights and vehicles occupy all the entry lanes at the stop line, the ESV driver should consider one of the following three options:

- 1 Stop short of the queuing traffic and switch off all emergency lights and sirens until the traffic lights change to green (Figure 3). Traffic light junctions such as this are too dangerous to cross while the lights are red. These are normally where views are restricted, multi-lane carriageways or where the speed of cross traffic is high.



Figure 3

- | | |
|---|--|
| 2 | Position the ESV to straddle the white lines between lanes to encourage other road users ahead to move sideways, 'parting the waves' (Figure 4). |
|---|--|



Figure 4

- | | |
|---|---|
| 3 | Move into the opposing lane and approach the junction slowly (Figure 5). This should ensure that the ESV driver does not cause the queuing traffic to drive into the junction against the red lights. |
|---|---|



Figure 5

Stop signs

The advice to ESV drivers approaching traffic light controlled junctions also applies to the approach to stop signs. ESV drivers should not proceed beyond a stop sign / line until other road users, if present, are aware of and have reacted correctly to the presence of an ESV.

Approaching pedestrian and pelican crossings

The advice to ESV drivers approaching traffic light controlled junctions also applies to the approach to pedestrian and pelican crossings. Information must be gathered in respect of road layout and the presence and movement of pedestrians.

The speed of approach should allow the ESV driver to stop within the distance they can see to be clear. Pedestrians may be hidden by any vehicle on the approach (Figure 6).

When a pedestrian has moved onto the crossing the ESV driver must give precedence until it is safe to progress.



Figure 6

Keep left/right signs

ESV drivers should be aware of additional hazards when contravening keep left/keep right signs, as the ESV will be in an unexpected position for other road users. Where there is a central refuge for pedestrians, the ESV driver should consider pedestrians who could be looking in the opposite direction when they cross the road and may step into the path of the ESV (Figure 7).



Figure 7

Continuous white lines

When undertaking emergency response it may be appropriate/necessary to cross continuous white lines. No circumstance can justify availing of any exemption where safety is compromised. Continuous white lines indicate the presence of a hazard in the road or environment in that given area. The ESV driver should identify the hazard, i.e. junction ahead, series of corners etc. and plan the drive accordingly.

Often continuous white lines are located where vision is restricted or where there is limited room for preceding/oncoming vehicles to give precedence to an ESV such as in a series of corners. In such circumstances the ESV driver should consider switching off emergency lights and sirens and holding back from the preceding vehicles (Figure 8). This will reduce the risk that the preceding vehicle will slow down or come to a stop in a hazardous position.



Figure 8

If this approach is taken the preceding vehicle will continue at normal road speed through the hazard resulting in better progress rather than slowing down or stopping where an overtake for the ESV is not possible or practicable.

If an obvious location for progress presents itself, consideration can then be given to re-activate the emergency lights and sirens. The example in Figure 8 shows a lay-by for the preceding traffic to pull into.

Hatch markings

Some hazards to consider when responding over hatched markings are:

- Preceding or oncoming road users turning across your path.
- Accumulation of dirt and debris can cause a loss of traction and can be further exaggerated in wet conditions.
- Possible tyre damage due to accumulated debris.
- Traffic bollards or traffic islands in the centre of the markings.

Positioning to see and be seen

Alternating headlights/white LED repeaters are the most effective visual warning equipment during daylight hours. In order to obtain the greatest advantage, ESV drivers should position their vehicles to make the most of these lights.

Where safe to do so, early positioning towards the offside can enable the ESV driver to obtain early views. Preceding vehicles and oncoming road users may observe the ESV earlier.

ESV drivers must be prepared to surrender that position should an oncoming road user not react appropriately.

Positioning as shown below (Figure 9) also provides the ESV driver with a better view of the road and other dangers ahead. The driver of the preceding vehicle will be aware that the ESV is attempting to overtake.



Figure 9

The driver of the ESV vehicle should always ensure a safe gap is available on the nearside should the oncoming drivers not react appropriately.

Approaching and overtaking vehicles

When approaching preceding traffic, ESVs should be travelling at a position and speed to respond to heavy braking by vehicles ahead.

Prior to overtaking, the ESV driver should search for evidence that drivers ahead are aware of their presence. Examples include activation of nearside indicator, vehicle movements into the nearside or offside, driver's head and body movements. ESV drivers must not assume that other road users have seen and/or heard their vehicle.

The example shown below (Figure 10) depicts the drivers of the two lead vehicles reacting to the ESV through application of brakes. The driver of the red vehicle is unaware of the ESV and is overtaking the slowing vehicles ahead. The ESV driver misreads the situation and starts to overtake. The driver of the red vehicle pulls out into the path of the ESV.



Figure 10

Oncoming vehicles

Once road users have given precedence, the ESV driver should remain vigilant to other oncoming vehicles suddenly pulling out from behind the lead vehicle. The ESV driver's speed must allow time to stop should an oncoming vehicle suddenly present itself. This is especially important if the oncoming lead vehicle is large, – for example, a large goods vehicle, van or bus (Figure 11).

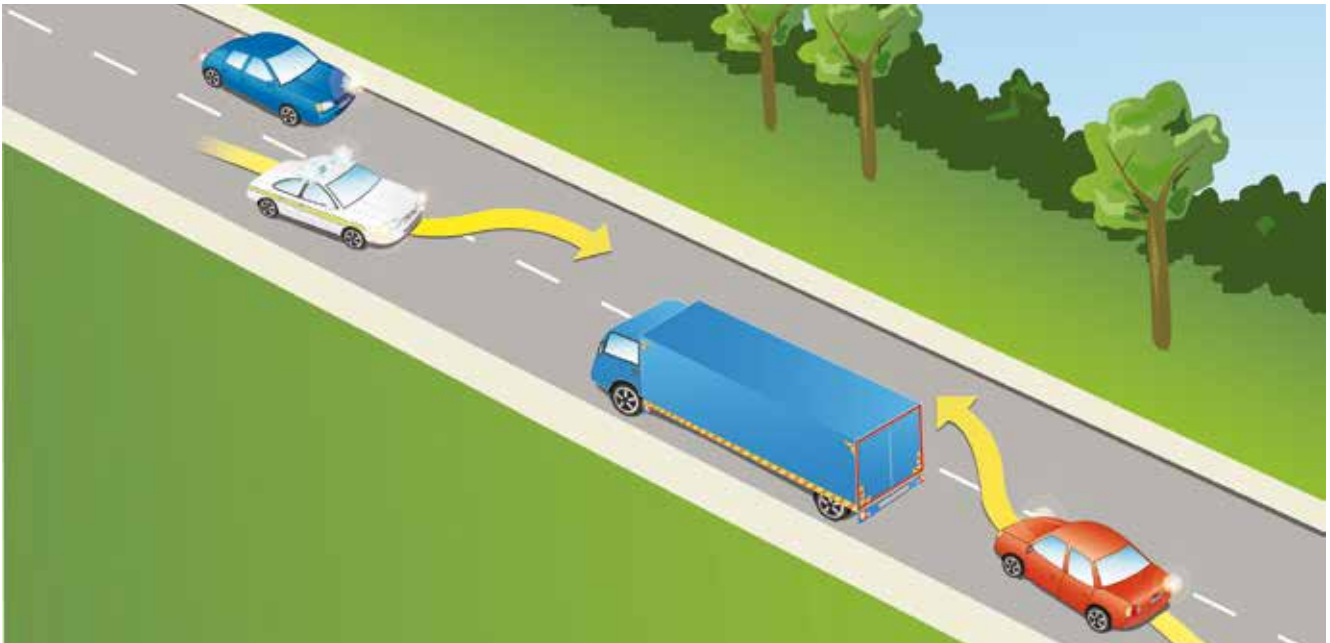


Figure 11

Overtaking slow-moving vehicles across junctions

When it is necessary for ESV drivers to progress past slow moving or stationary vehicles, they must be aware of the additional hazards presented by road junctions and adjust the speed accordingly.

Nearside junctions

In the example shown below (Figure 12), the ESV driver must be vigilant to vehicles emerging from the junction.



Figure 12

Offside junctions

Any road users turning left from an offside junction may emerge into the path of the ESV vehicle (Figure 13). Therefore, when approaching offside junctions with limited or no view into them, ESV drivers must be in a position to stop or regain the correct side of the road should a vehicle emerge. ESV drivers must never assume that emerging road users will look to the left prior to entering the road.



Figure 13

Misinterpreting other road users signals

It is common for motorists to flash their headlights to signal to others their intention to give way in various driving situations.

In Figure 14 below, there are three drivers who may perceive that the headlight flash from the green car is directed at them, i.e. the driver of the red vehicle waiting to emerge from the minor road, the driver of the blue vehicle waiting to turn right, and the ESV driver. In situations such as this ESV drivers must take extra care, and reduce their speed until they have safely negotiated the junction.



Figure 14

Stationary vehicles at or near an incident

ESV drivers approaching the scene of an incident may be distracted searching for the exact location and their attention may be drawn away from the road immediately ahead thereby increasing the risk.

Other risks occur where drivers have been stationary for some time and they conduct 'U' turns or alight from vehicles. Pedestrians may also walk between the stationary vehicles (Figure 15).



Figure 15

Responding on multi-lane roads

When responding on multi-lane roads equipped with central reservations, such as dual-carriageways and motorways, positioning will vary according to the volume and speed of vehicles ahead. Consideration must also be given to the size of the ESV to ensure sufficient space to progress through the traffic safely.

In very congested conditions where vehicles are either stationary or travelling at low speed, it is best practice for ESV drivers to straddle lane markings to allow traffic ahead to spread left and right. This is often referred to as 'parting of the waves' (Figure 16).



Figure 16

ESV drivers must be aware that some road users ahead may not react as expected; therefore their approach speed must enable them to react to any vehicle crossing their path.

Where traffic is free flowing, ESVs should travel in the outer lane and allow vehicles ahead to move into nearside lanes. Drivers ahead should not be placed under undue pressure to do so. The ESV driver must be aware that vehicles in lanes on the nearside ahead may suddenly move into the outer lane (Figure 17).



Figure 17

Hard shoulders and bus lanes

Hard shoulders and bus lanes should not normally be used for emergency response. The following factors should be considered before they are used:

- The traffic in all of the offside lanes is slow moving/congested impeding progress.
- Always enter and travel the hard shoulder/bus lane at an appropriate speed, i.e. a speed at which you can stop in the distance that you can see to be clear.
- Exercise caution when entering from behind a heavy goods vehicle because the view ahead will be restricted.
- Be aware that road users that hear sirens and see emergency lights may veer onto the hard shoulder/bus lane and into your path.
- The hard shoulder is frequently littered with dirt and debris all of which will affect your stopping distance or cause damage/punctures to the vehicle.
- Be alert for all other road users including stationary vehicles and other hazards such as bus stops.
- Consider your intended route when using bus lanes. Will it be necessary to cross over multiple lanes of traffic at the end of the bus lane?
- Will traffic cross the bus lane to turn left/right?
- Is the size and layout of the bus lane sufficient for the ESV?
- Is the bus lane frequently reduced or interrupted by junctions?
- Consider the intelligent use of the warning equipment.

Approaching roundabouts

Roundabouts should be dealt with in the same manner as the approach to traffic-light controlled junctions. The approach and entry speed should be low, so as not to cause drivers on the roundabout to over-react or brake hard.

If there are other road users occupying all approach lanes to the roundabout, the ESV driver should adopt the same procedures as those for dealing with traffic-light controlled junctions.

The ESV driver should consider the options below to minimise the risk of preceding drivers entering the roundabout into the path of other vehicles on the roundabout:

1	Turning off all the emergency lights and sirens and hold back.
2	Straddling the lane markings to cause a 'Parting of the waves'.
3	Subject to view and safety consider utilising the opposing carriageway. The ESV driver must bear in mind that drivers leaving the roundabout may have a late view of the ESV vehicle (Figure 18).



Figure 18

The lower the approach speed the more time is given to other road users to facilitate the ESV vehicle's progress. Roundabouts are a one-way system and entering against the flow of the traffic should not normally be considered.

Passing down the nearside of other vehicles

When ESV drivers are travelling along the nearside of stationary or moving road users, these users may find it hard to visually locate the ESV's position. Upon hearing sirens, the natural reaction of road users is to move to the nearside in order to facilitate progress of the ESV. ESV drivers must build this potential into their driving plan and drive at an appropriate speed.

Anticipation will be enhanced by detailed observation of other road users, i.e. hand movements on the steering wheel, indicators, brake lights and movement of the wheels. These clues can provide early warning of potential movement to the nearside (Figure 19).



Figure 19

Vehicles responding in convoy

Two or more ESVs travelling together undertaking emergency response can present additional hazards. Road users may only react to the lead ESV, and once it has passed may resume their journey into the path of the second ESV (Figure 20).



Figure 20

Circumstances will dictate whether ESV drivers should extend the ‘reactionary gap’ between the ESVs to allow other road users time to realise that there are two or more ESVs approaching.

Other ESVs attending the same or other incidents could also be encountered and must always be considered.

If ESVs are responding in convoy (e.g. an ambulance being escorted, or fire service vehicles), then the following guidelines should apply:

- Make sure different siren tones are used.
- Always keep a safe distance from the ESV in front.
- Don’t follow other ESVs blindly.
- Always wait for road users to react to your presence. They may well give precedence to the first vehicle and then pull out in front of you.
- Where possible, ESV drivers should collaborate and plan the response route and maintain communications.
- Consideration should be given to the performance and capabilities of the other ESVs in convoy.
- ‘Drive your own drive’ – do not allow yourself to be drawn into situations.

Temporary traffic controls and road works

Temporary traffic controls are normally used to direct traffic while road works are being carried out. When undertaking response, no attempt should be made to contravene a temporary traffic control unless the ESV driver is sure not only that the way is clear to the end of the road works, but also that no other road user will be endangered.

Care must also be taken in relation to road workers and works vehicles in the vicinity. It may be necessary to reduce speed considerably at road works because of the presence of road workers, vehicles or poor road surfaces (i.e. surface stripped of tarmac, ramps etc.). Cognisance should be given to any temporary speed limit.

Vulnerable Road Users

Cyclists

Cyclists are very hard to see and also may over-react when an ESV is approaching. The common reaction is to look over their shoulder towards the ESV. This in turn can cause a deviation off course or instability. It is therefore important to provide an appropriate safety margin when passing cyclists.

Motorcyclists

Motorcyclists are also difficult to see and are less able to observe and hear ESVs. The riders have restricted peripheral vision caused by crash helmets, which combined with engine and wind noise hampers their hearing. In wet weather their forward vision may be further impeded by water droplets remaining on their visors, which may be accompanied by condensation forming on the inside surface of the visor. ESV drivers should be aware that sudden heavy braking on a motorcycle is hazardous for the rider. It is possible for a motorcyclist to lose control of their machine under sudden heavy braking, especially on wet or slippery road surfaces. ESV drivers should also be aware that cyclists and motorcyclists may travel along both the nearside and offside of slow moving or stationary traffic.

Horses and other animals

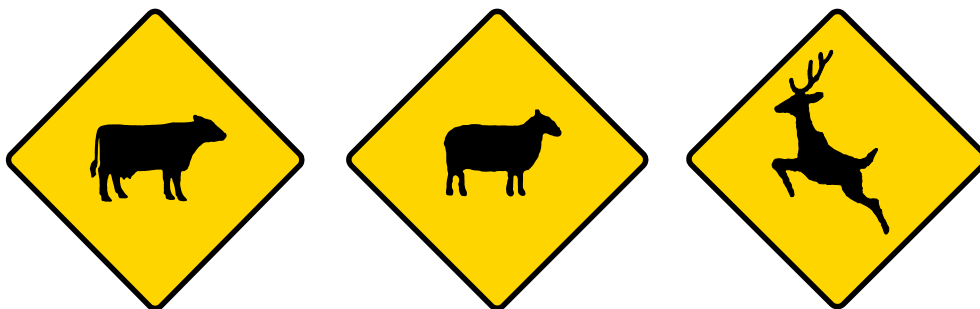
Horses may be easily startled by noise, movement or bright colours. When approaching horses and riders ESV drivers should consider deactivating all the emergency lights and sirens, reduce speed and pass safely.



Figure 21

Consideration should also be given to other animals, particularly in rural areas and where animals are being transported in livestock vehicles, herded on open roads or positioned close to public roads.

Hazard warning signs depicting animals should therefore be observed and the information integrated into the driving plan.



Pedestrians

The presence of pedestrians/crowds should be integrated into the driving plan. Individual groups may react adversely to an ESV. ESV drivers must be mindful that their speed should be such that they can stop if a pedestrian steps into their path. The elderly and the young may find it difficult to judge the speed and distance of approaching vehicles. In adverse weather conditions pedestrians tend to take risks. Hoods and umbrellas may hamper their awareness. The use of audio equipment and mobile phones may also impact their awareness of an ESV.



Figure 22



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