



Government of **Western Australia**
Department of **Transport**

Warning Lamps



A guide for installation and operation

Warning Lamps

The purpose of this bulletin is to inform industry of the requirements for installing warning lamps on motor vehicles. The management and operation of vehicles fitted with emergency lamps is also included.

Also explained is the meaning of various flashing coloured lamps and the circumstances in which these important warning devices may be used. "Emergency vehicles" referred to in this circular are in accordance with the definition in the Road Traffic Code or they have been defined as such by the Director General of the Department of Transport.

It is important to note that flashing lamp combinations are priority specific as opposed to emergency service provider specific.

This policy has been developed by the Department's Vehicle Safety and Standards Section in consultation with relevant statutory authorities and interested parties.

Approval must be obtained from the Department for the fitment and use of flashing warning lamps on vehicles not specifically listed in the Road Traffic Code 2000 as being permitted to display such lamps.

Applications for the use of warning lamps outside the scope of this document will be assessed by the Vehicle Safety and Standards. A Management of Warning Devices Advisory Committee has been formed to assist the Department to refine policy in this area, to determine the appropriate priority allocation for extraordinary circumstances and for situations not already covered herein and to review best road safety practice. The Management of Warning Devices Advisory Committee can be contacted through the Vehicle Safety and Standards Section on 13 11 56.



Fig. 1

Emergency Priority

The colour of flashing lamps to be displayed, in an emergency, is determined by the type of emergency. Emergencies requiring flashing lamps have been classified into the following four categories;

Priority One	Life and / or Serious Property Threat Emergency
Priority Two	High Risk Personal or Property Threat Emergency
Priority Three	Statutory Law Enforcement Emergency
Priority Four	Potential Danger or Risk Emergency

The flashing lamp colour displayed is dependent upon the type of emergency that the vehicle is required to regularly attend. (See page 10, Table 1, "Emergency Priority Categories" and Table 2, "Approved Warning Devices")

Flashing Lamps

A flashing lamp displayed on a vehicle may only be amber/yellow, blue, white, red, green or magenta/ crimson. Each colour, or combination of colours, conveys a particular and individual type of warning to road users.

Also, flashing warning lamps must be visible in normal daylight from a distance of at least 500 metres to drivers of vehicles approaching from any direction.

More than one lamp may be used to enable this requirement to be met. The lamps should be mounted as near to the top of the vehicle as practicable.

The flashing lamp equipment shall have an audible or visible indicator mounted within the vehicle, to warn the driver that the lamp is operating.

To avoid distraction to the driver, a flashing lamp must not be fitted directly within the driver's normal field of vision. Neither should the lamp be visible in the rear view mirrors.

Traditional incandescent type warning lamps must have a minimum of 55 watts of power.

Where LED warning lights are used as the primary source of illumination in warning lamps, it may have a power of less than 55 watts but must have a combined power of not less than 24 watts.

Vehicle Safety and Standards advice to use warning lamps with clear plastic outer covers.

To guard against incorrect use and to avoid possible detracting from the significance of a flashing warning lamp, their use is limited to particular vehicles and particular circumstances. (See page 11, Table 3, "Typical Priority of Operation Matrix")

Colours of Flashing Lamps

All major agencies have strict sets of guidelines for the control of their emergency or special purpose vehicles specifying how each vehicle may be authorised to activate warning devices and respond to particular emergencies. The following therefore should be read in conjunction with any relevant instructions issued by the authority primarily responsible for the emergency.

The Warning Lamps mentioned herein should only be fitted permanently to vehicles that primarily provide active response to emergencies on a day to day basis. Warning Lamps should not be fitted to vehicles that do not provide primary active response; rarely provide such response or; have a primary role that is quite different from that indicated by the particular lamp or combination of lamps.

Lamps that may be used in less common situations or for temporary periods should be removed as soon as practicable after completion of the occurrence that gave rise to such use.

Red, Blue, White Priority One Emergency

Combinations of red, blue and white flashing lamps may only be fitted to vehicles that regularly attend life threatening and serious property damage emergencies.



Fig. 2

Vehicles typically in this category are Police vehicles, Ambulances, Operational Fire Brigade or Bush Fire Brigade vehicles, Blood/Organ courier vehicles, and certain Army and State Emergency Service vehicles. The lamps shall only be activated when the vehicle is attending an emergency.

Priority One vehicles shall normally have the flashing lamp system supplemented with a high volume siren or horn auditory warning system.

Specific written authorisation is required for vehicles not specifically authorised in the Road Traffic Code or the Road Traffic (Vehicle Standards) Regulations. The Department will assess applications for authorisation on an individual basis. Suitable driver training is required in all cases. Fire and Emergency Services Authority (FESA) endorsement is required if authorisation is sought for a fire fighting vehicle that is not owned or specifically designated as a primary response vehicle of that authority.

Vehicles used in this category will usually provide active response that may involve high speed and continual contravention of the normal road rules (at times at increased risk) under special emergency exemption provisions, provided by the Road Traffic Code 2000, during the period of operation.

Red Priority Two Emergency

A red flashing lamp warns road users of the presence of an emergency service vehicle associated with a high personal or property threat situation.

Red flashing lamps may only be fitted to vehicles such as Ambulances, Operational Fire Brigade and Bush Fire Brigade vehicles, Mines Rescue vehicles and certain State Emergency Service Vehicles. The lamps shall only be activated when the vehicle is providing active response to an emergency.

Priority Two vehicles should also have the flashing lamp system supplemented with a high volume siren or horn auditory warning system.

Removable red flashing lamps may also be used on some vehicles (eg Medical Doctors) that are infrequently used for responding to emergencies. These vehicles with removable lamps will not be permitted to have sirens or horn auditory warning systems.

Authorisation is required for vehicles not mentioned, specifically, in the Road Traffic Code or the Road Traffic (Vehicle Standards) Regulations. The Department will assess requests for authorisation on an individual basis. Suitable driver training is required in all cases. Fire and Emergency Services Authority (FESA) approval is required if authorisation is sought for a fire fighting vehicle.



Fig. 3

Vehicles used in this category will usually provide active response that may involve some speed and regular contravention of the normal road rules under special emergency exemption provisions during the period of operation.

Magenta/Crimson Priority Three Government Enforcement



Fig. 4

A magenta/crimson flashing lamp warns road users of the presence of a vehicle carrying out functions associated with the enforcement of statute laws.

Examples of these vehicles are Main Roads Road Transport Compliance Unit, CALM, Fisheries, and Mines Department vehicles. The lamps shall only be activated when the vehicle needs to warn the public of its presence.

Authorisation is required for vehicles not mentioned, specifically, in the Road Traffic Code or the Road Traffic (Vehicle Standards) Regulations. The Department will assess requests for authorisation on an individual basis. Suitable driver training in the safe and appropriate use of the lamps is required in all cases.

Amber/Yellow Priority Four Hazard Warning



Fig. 5

Amber or yellow flashing lamps warn road users of a hazard on the road or abnormal obstruction to the free flow of traffic.

Amber/yellow flashing lamps may be fitted to vehicles which operate in hazardous situations that are of a priority four category (i.e. Potential danger or risk to any individual).

The lamps do not have to be removed when the vehicle operates in non-hazardous situations. However, the flashing lamp must not be switched on in these circumstances. Examples of vehicles which can be fitted with amber/yellow flashing lamps are:

- Tow trucks;**
- Road works vehicles;**
- Public utility service vehicles** (street sweepers, garbage trucks and elevating platforms);
- Motor breakdown service vehicles;**
- Buses used for the conveyance of children to or from school as specified in the Road Traffic (Vehicle Standards) Rules 2002;**
- “Over-dimensional” vehicles** (See “Over-dimensional Vehicles” page 9);
- Escort / Pilot vehicles** for over-dimension vehicles; and
- State Emergency Service non-rescue vehicles.**

Amber/yellow flashing lamps may only be fitted to those vehicles listed in the Road Traffic (Vehicle Standards) Regulations 2002, which operate in hazardous conditions. Owners of other vehicles which may be utilised in hazardous situations not mentioned, may apply to the Director General of Department for Planning and Infrastructure, for approval to fit warning flashing lamps. Each application will be considered on its merits and the applicant duly notified.

Note: *The use of amber/yellow flashing lamps, does not give any priority over other traffic nor does it permit general contravention of the Road Traffic Code (i.e. driving rules). An amber warning lamp may only be used when the vehicle is either standing or moving in hazardous circumstances as specified in the Code.*

Green Command Centre

This is a very restricted use lamp.

A green flashing lamp identifies the location/ presence of an “Emergency Site Command” post or “Casualty Clearing Post”. This situation normally involves a stationary operational fire brigade, bush fire brigade, ambulance, WASES or police vehicle that has been set up specifically to co-ordinate operations at a major emergency site.

Green flashing lamps are unique under this policy in that they are used as an identification device rather than a warning. they shall not be fitted to any other vehicle and should not be operated while the vehicle is in motion. Operational fire brigade, bush fire brigade, ambulance, WASES and police emergency site command vehicles may only display lamps relevant to the situation while in motion.

Approval for Fitting Lamps

Organisations owning or operating vehicles that are permitted, in the Road Traffic Code 2000, to have warning flashing lamps will not normally be required to obtain approval for the fitting or use of relevant lamps. However, each organisation needs to ensure that each individual operator receives appropriate training in the correct usage of relevant lamps.

All Priority 1 and 2 operators require fully accredited training. Training for lesser categories is not as stringent but correct legal use and “Duty of Care” issues must be addressed before operators are permitted to operate the relevant vehicle.

Responsibilities of Service Providers

The organisation owning or operating the vehicle should keep a register of all vehicles fitted with flashing warning lamps. They should also maintain details of each training course, those operators that are accredited and any other information that is necessary to support use of a certain priority lamp on a vehicle.

All of this information should be readily available for inspection, by a third party, in particular for instances such as crash investigation.

Organisations should also seek independent advice from the appropriate authorities to ensure that their responsibilities under Occupational Health and Safety legislation and “Duty of Care” are met.

Training

Operators of vehicles fitted with flashing warning lamps must be trained in the correct usage of these lamps. Any organisation operating the vehicle is responsible for ensuring that all operators have been provided with the appropriate training. As mentioned previously details of all operators should be readily available for inspection.

Priority one and two categories

As vehicles in these categories are normally rapid response emergency vehicles their drivers are generally exempt from the normal requirements of the Road Traffic Code provided that it is safe and reasonable in the circumstances to proceed contrary to the regulations. Organisations operating these vehicles must ensure that their personnel have passed an appropriate driving course that is relevant to the operation of the particular vehicle in emergency situations.

Priority three category

These vehicles are utilised to request people to pull over onto the side of the road for the purpose of carrying out inspections. These operators are required to have attended a course of training appropriate to this role.

Priority four category

These vehicles are utilised in circumstances where the vehicle or activities in the immediate vicinity of the vehicle create a hazard to other road users. Operators shall be trained as to the relevant law, their “Duty of Care” and the circumstances under which they are permitted to use the lamps.

Hazard Warning Lamps

Generally all vehicles manufactured after 31 August 1983 (except motorcycles), are fitted with hazard warning lamps (similar to or part of normal indicators) as required by the Australian Design Rules. These lamps are separate from and do not normally relate to these guidelines for emergency and special purpose vehicles.

To avoid causing confusion to other motorists, these hazard warning lamps may only be switched on if the vehicle is standing or moving slowly in hazardous circumstances or when driving in hazardous weather conditions (for example smoke or fog). The use of these hazard warning lamps does not permit drivers to stand or park illegally.

Headlamps

Under ordinary circumstances, a vehicle's headlamps may only display a steady beam. However, flashing of the low beam, in conjunction with the flashing coloured lamps, may be authorised on some Emergency Vehicles.

Medical Doctors' Vehicles

Medical Practitioners who are required to respond to emergencies on a regular basis may, on application, be authorised by the Department to utilise a removable red flashing warning lamp. Authorisation is conditional upon vehicle users completing an approved training course in emergency response driving.



Fig. 6

All applications should be made through the Australian Medical Association (AMA). Membership of the AMA is not a prerequisite for approval.

Incident Management Vehicles (eg. Transit Vehicles)

Incident Management Vehicles that may attend hazardous situations in the course of their operation may be fitted with a roof mounted light bar (similar to that used on emergency vehicles) incorporating only amber lamps.

The amber lamps shall only be operated when the vehicle is stationary or manoeuvring at less than 20 km/h and creating a hazardous situation on the road system. Incident Management Vehicles must always be operated in accordance with all requirements of the Road Traffic Code 2000. It is important to note that the use of these lamps does not authorise or imply the right of way or priority over any other vehicle or road user.

Shire Ranger Vehicles

Vehicles operated by Local Government Rangers are permitted to have amber flashing lamps installed. These lamps may be contained within a light bar. The lamps are only to be illuminated when the vehicle or ranger operations are creating a hazard to other road users.



Fig. 7

In some Local Government Districts the Ranger is also the first response officer for bush fires. These vehicles may utilise a red flashing lamp when carrying out these fire response duties. However the approval for fitment and use of these red lamps is based on written confirmation being first obtained from the Fire and Emergency Services Authority that the Ranger is in fact a Fire Response officer. Approval is also conditional upon vehicle users having completed an approved training course in operation of the relevant category of emergency vehicle.

Road Works Vehicles



Fig. 8

Vehicles engaged in road construction or road maintenance are permitted to have amber flashing lamps displayed when the vehicle is creating a hazard or abnormal obstruction while performing road construction or road maintenance.

Operators should refer to the Australian Standards AS1742, AS1743 and AS1744 for guidance as to best practice for roadwork operations.

A high percentage of road works plant vehicles are licensed and consequently they can be driven on the roads from the depot to the road construction site or between construction sites. As many heavy equipment vehicles create a hazard whilst being driven to or from the work site, amber flashing lamps should be displayed in accordance with Vehicle License requirements.

Mining Vehicles

Vehicles used in the mining industries may be required to have flashing lamps fitted for use on site.

Mine vehicles categorised as *special use vehicles* under the WA government gazetted notice No 113 on Friday, 30 June 2006 are allowed to be use on public roads with warning lamps fitted. However these *special use vehicles* are **not allowed** to operate warning lamps on public roads.

The requirements on mine sites do not apply to public roads where such use is normally illegal

Taxis

Taxis may be fitted with flashing white lights, incorporated within the illuminated "TAXI" sign, for the purpose of indicating that the driver is under attack or otherwise in distress.

Rental Vehicles

The Department recognises that Contractors involved in the mining, quarrying and construction industries form a large proportion of hirers of light commercial vehicles. As an interim measure, light commercial rental vehicles are, therefore, permitted to have amber flashing warning lamps fitted for on site use.

Covers must be provided by the hire company and must be fitted to these lamps when the vehicle is used on public roads. As hire fleets are replaced, a transition should be made to demountable lamps. These lamps should only be supplied in cases where the client specifically requires them. The hire company is responsible for advising customers of the requirement to use the covers or demount the lamp bodies when the vehicle is used on public roads.

Pilot and Escort Vehicles

Pilot and escort vehicles travelling in front of or behind oversize or overmass vehicles are required to display amber flashing warning lamps in conjunction with a sign reading "OVERSIZE LOAD AHEAD". Alternating, white flashing lamps facing ahead of the vehicle are also permitted as an optional fitment.



Fig. 9

Performance and usage requirements and dimensional information for the lamps and signs are included in the Road Traffic (Vehicle Standards) Regulations 2002. Operators of pilot and escort vehicles should refer to these regulations for further detail.

Over-dimensional Vehicles

Vehicles that exceed the maximum dimensions specified in the Road Traffic (Vehicle Standards) Regulations 2002 are permitted to be operated on the roads under the specific conditions listed on a Permit or Notice issued by Main Roads WA (MRWA). Many of these vehicles are required to have an amber flashing lamp mounted on the roof of the truck. This lamp shall only be activated when the vehicle is being driven in accordance with the MRWA permit as an over-dimension vehicle.



Fig. 10

In addition the Road Traffic (Vehicle Standards) Regulations 2002 require the amber flashing light to be displayed in daytime when a vehicle exceeds 3 metres in width or if the load is less than 500 mm thick and it projects more than 150 mm outside a 2.5 metre width envelope.

This Circular does not alter the current amber flashing lamp requirements, for the towing of over dimensional farming equipment, specified in the Road Traffic (Towed Agricultural Implements) Regulations.

Security Vehicles

Security Vehicles that may attend at a hazardous situation through the course of their operations may be fitted with a roof mounted light bar (similar to that utilised on emergency vehicles). The design of the bar shall comply with the attached diagram

The Amber Hazard Lamp shall only be operated when the vehicle is creating a hazardous situation on the road system. Security vehicles must always be operated in accordance with all requirements of the Road Traffic Code 2000.

The dimensions given are typical and show the proportions of the light bar.

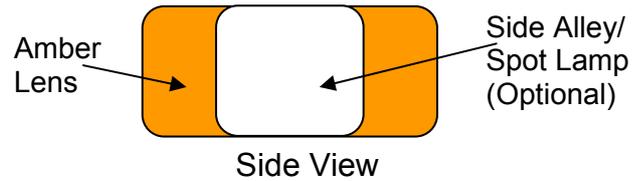


Fig. 11

The “Amber Hazard Lamp” consists of a lamp similar to turn signal indicator. It shall not be a rotating flashing lamp or a strobe light. The wiring shall be such that all four lamps flash together when activated. The flashing frequency shall be the same as for the vehicles turn indicators or Hazard Warning Lamps and may be wired to correspond with these.

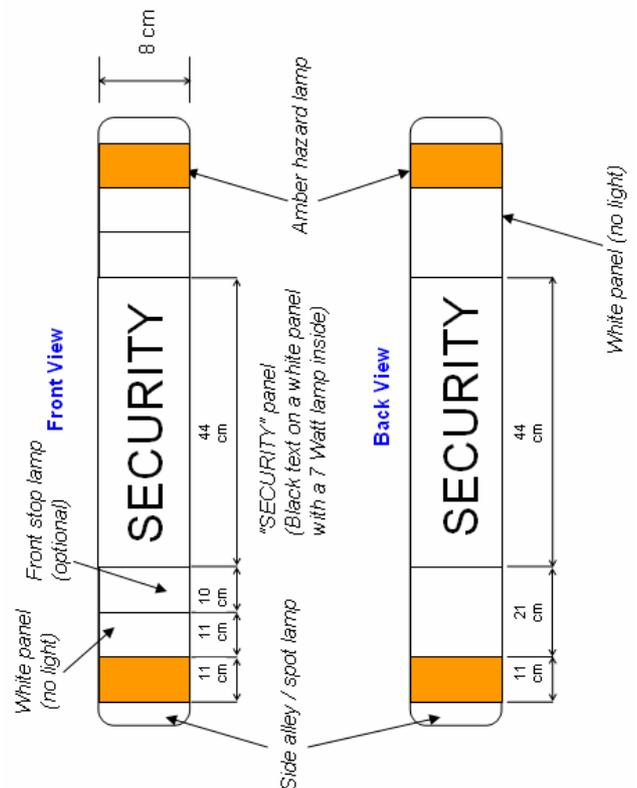


Fig. 12

Table 1 - Emergency Priority Categories

Priority	Degree of Urgency	Level of Risk
1	Most urgent	Life and/or Serious Property threat
2	Urgent	High Personal or Property Risk
3	Statute Enforcement	Statute Enforcement Powers
4	Potential danger or risk	Unusual areas of risk

Emergency Priority Category Definitions

Priority One Emergency Service role is of the highest priority usually involving life threat, serious injury or significant property damage. Also the service is in constant alert and may be required at any time with minimal notice.

Priority Two Usually attends dangerous situations, which are generally not first response or do not require a very high level of urgency. Public are not exposed to the same danger as for Priority One although there may on occasions be the risk of life and serious property damage.

Priority Three Mainly includes vehicles used for the enforcement of statutory powers relating to stopping and/or searching. Bodies operating such vehicles include the Department of Conservation and Land Management, the Department of Fisheries, Main Roads' Transport Compliance Unit and the Department of Industry and Resources.

Priority Four Generally covers hazardous or potentially dangerous situations that would be more than motorists might expect to encounter. This includes dangerous situations such as operating rubbish trucks, tow trucks, earthmoving vehicles and road works vehicles.

Table 2 - Approved Warning Devices

Priority	Flashing Light Colour	Audio
1	Red, Blue & White	Electro or mechanical siren or horn
2	All Red except Police Blue	Electro or mechanical siren or horn
3	Magenta	Electro or mechanical siren or horn (according to need)
4	Amber	No audio device

Emergency Command Centre and Casualty Clearing Centre

In some major emergency situations the emergency service providers have found that it is necessary to set up a command centre. The policy allows a green flashing lamp to be utilised as an Emergency Command Centre. The use of this lamp is restricted to stationary vehicles only

A green flashing lamp may also be displayed by a stationary vehicle acting as a Casualty Clearing Centre

Table 3 - Typical Priority of Operation Matrix

§ CALM - The Department of Conservation and Land Management

SES - State Emergency Service

* UXO - Unexploded ordinance

Priority	Typical User Group	Typical Operational Limitation
1	Police Fire & Rescue Bush Fires Ambulance Blood/Organ Courier Defence Force Police Army - UXO* SES#	No limitations - subject to the driver taking reasonable care and the circumstances warrant the action taken. Applies to all users within this category. Road Accident & Cliff Rescue
2	SES CALM § Ambulance vehicles Minerals and Energy Mines Rescue Local Government	Response Rescue vehicles Fire fighting vehicles UXO Ranger, Fire fighting
3	CALM Department of Fisheries Main Roads WA Department of Industry and Resources	Wildlife & Flora inspection Fisheries (as an auxiliary role) Fisheries Inspection Wildlife & Flora (as an auxiliary role) Road Transport Compliance Unit Dangerous Goods Inspection
4	SES Local Government Tow Truck Roadside Mechanical Repair Municipal Roadwork Escort Vehicles Heavy Vehicles	Logistic Support Ranger, Stock, Road hazard etc., Rubbish trucks Road maintenance vehicles Vehicle recovery Urgent Mechanical repair in hazardous situations. Only vehicles required to move or stand in hazardous position. (All other work should be covered by static sign) Road Maintenance vehicles While engaged in escort work Over-dimensional loads



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