# Terrain response

## PRINCIPLE OF OPERATION

The Terrain Response System provides an opportunity for the driver to feed back terrain information to the vehicle by choosing a general setting or one of three special programs. It then uses that information to optimise the vehicle's systems for improved traction and driveability. It does this by bringing together vehicle drive control systems which usually operate individually.

The drive systems optimised by the Terrain Response System are :-

- Engine management.
- Gearbox management.
- Intelligent coupling control.
- Dynamic stability, traction and Hill Descent controls.

The system will provide a variable accelerator pedal response, ranging from very cautious for slippery conditions (where a large pedal movement has only a small effect on engine power) to very responsive (where engine power is allowed to rise more quickly).

***Note:*** *Changing from one special program to another will introduce noticeably different responses. For example, the engine revs produced by the current accelerator pedal position, may increase or decrease in the new program.*

*To familiarise yourself and get the best from the system you should try out the programs in circumstances which are safe for you and other road users.*

Terrain response has been designed to benefit the driver no matter what their level of off-road driving experience. The system will aid those with less experience, and enhance the skills of those with more experience.

## USING TERRAIN RESPONSE

***Note:*** *The Terrain Response System is designed to be engaged before crossing difficult terrain. Do not wait until control has been lost before using the special programs.*

When the vehicle is started, the Terrain Response System will be in its General (special programs off) program. The General (special programs off) program will allow the vehicle to operate capably in most conditions, as some of the sub-systems will react to the conditions where appropriate. When conditions change, and more difficult conditions are encountered, the appropriate special program should be selected.

### Before driving off-road

Before venturing off-road it is absolutely essential that inexperienced drivers become fully familiar with the vehicle's controls. In particular, CommandShift, Hill Descent Control (HDC), and the Terrain Response system.

Basic information and off-road driving techniques can be found in the off-road driving handbook available on-line at **http://www.ownerinfo.landrover.com**

Off-road driver training should be undertaken by anyone intending to drive off-road. Training is available at your nearest Land Rover Experience centre. More details can be found at **http://www.landroverexperience.com**

### Driver override options

All systems will be set to their optimum parameters for the conditions reflected in the choice of special program. However, if required, Hill Descent control can be operated independently. See **USING HDC** (page 123). If it has not been automatically selected by the special program, it may be engaged as required. Conversely, if it has been selected, but is not required, it may be turned off.

The HDC status will be displayed on the message centre whether it is engaged or disengaged by the system, or the driver. Use of HDC in special programs may prompt additional driving advice, and warnings to be displayed on the message centre.

Although Dynamic Stability Control is automatically engaged when a special program is selected, it can be turned off if required. See **USING TRACTION CONTROL** (page 126).

Automatic gear selection can be overridden by using the CommandShift function.

### Terrain Response operation

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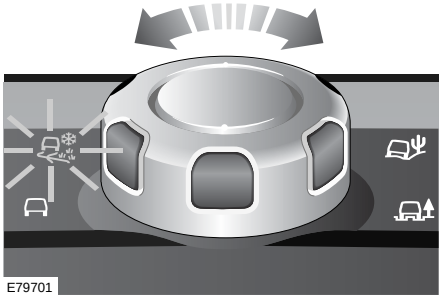
A rotary control just in front of the gear lever is used to select the required special program. When the selector reaches the end of the selection range in either direction it can be rotated further, but it has no effect.

In addition to the general (special programs off) program, there are three special programs.

- Grass/Gravel/Snow (also used for ice).
- Mud/Ruts.
- Sand.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When the starter button is pressed, the indicators around the rotary control are illuminated. The active program is highlighted in amber, and the program icon is displayed in the message centre.


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The special programs remain active for six hours after the ignition is turned off. If the ignition is turned on again within six hours the program will remain active. After six hours the general (special programs off) program is automatically selected.

### General program (special programs off)

This program is compatible with all on and off-road conditions. If not already active, it should be selected before driving on surfaces which are similar to a hard road surface. Dry cobbles, tarmac, dry wooden planks, etc. all fall into this category.

This program should be selected once the need for a special program has passed. Once the special program has been deselected, all of the vehicle systems will return to their normal settings except HDC. HDC will remain active if it was selected manually.

### Grass-Gravel-Snow

This program should be used where a firm surface is covered with loose, or slippery material. Surfaces covered in water, ice, slime, grass, gravel, shale, pebbles, or a thin coating of sand for example.

***Note:*** *For deep gravel it is recommended that the Sand program is selected.*

In slippery conditions, it may be beneficial to pull away in a higher gear than usual.

For information on the fitment and use of snow chains. See **USING TRACTION DEVICES** (page 182).

For information on the fitment and use of winter tyres. See **USING WINTER TIRES** (page 182).

***Note:*** *If the vehicle is unable to gain traction in deep snow, switching DSC off may help. DSC should be switched on again as soon as the difficulty is overcome. See* ***USING TRACTION CONTROL*** *(page 126).*

### Mud-Ruts

This program should be used for crossing terrain that is muddy, rutted, soft, or uneven.

### Sand

This program should be used for terrain which is predominantly soft dry sand, or deep gravel.

***Note:*** *If the vehicle is unable to gain traction in extremely soft, dry sand, switching DSC off may help. DSC should be switched on again as soon as the difficulty is overcome. See* ***USING TRACTION CONTROL*** *(page 126).*

If the sand to be crossed is damp/wet, and sufficiently deep to cause the wheels to sink into the surface, the Mud-Ruts program should be used.

### System difficulties

***Note:*** *Selection of an inappropriate special program will not endanger the driver, nor will it immediately damage the vehicle. However, if continued, use of an incorrect program will impair the vehicle's response to the terrain, and can reduce the durability of the drive systems.*

If the system becomes partially inoperable for any reason, it may not be possible to select special programs. A warning will be given when selection of a special program is attempted. If the Terrain response system becomes totally inoperable, all of the program indicators will be switched off, and the message centre will display the relevant message.

If a participating vehicle system becomes temporarily inoperable, the General (special programs off) program will be automatically selected. Once the system returns to normal operation, the previously active program will be re-activated unless the ignition has been turned off in the mean time.

### Terrain response messages

Messages relating to the terrain response system are displayed on the message centre. See **INFORMATION MESSAGES** (page 89).

Most of the messages that appear will be for information only, and require no driver intervention, **SAND PROGRAM SELECTED** for example.