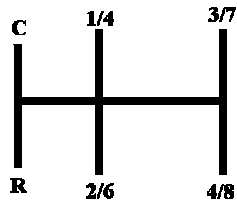


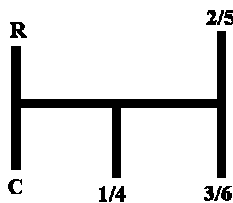
Gearboxes

One of the first things a newly qualified LGV driver notices is the number of different gearboxes and shift layouts used in heavy goods vehicles. This leaflet tries to familiarise you with some of the more common ones.

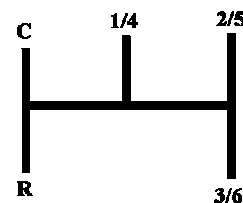
Synchromesh boxes



Standard 9-speed,
 Volvo, Scania,
 older ERF rigids.
 This layout is
 also found with
 splitter on larger
 DAFs.

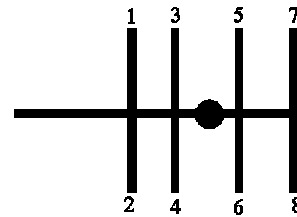


Scania 6 speed
 with splitter



Volvo 6 speed
 with splitter

8 or 16 speed bridge-shift, found on older Mercedes, Renault, Iveco and the ZF boxes fitted to ERF and MAN vehicles. This shift is easiest to operate if you assume it has 2 neutrals between 3/ and 5/6. When range changing, slap it across so it finds the neutral, and then select as you would a 4 speed. If you try and push directly “across the box”, you’ll struggle unnecessarily.



C = crawler, which is not synchro!

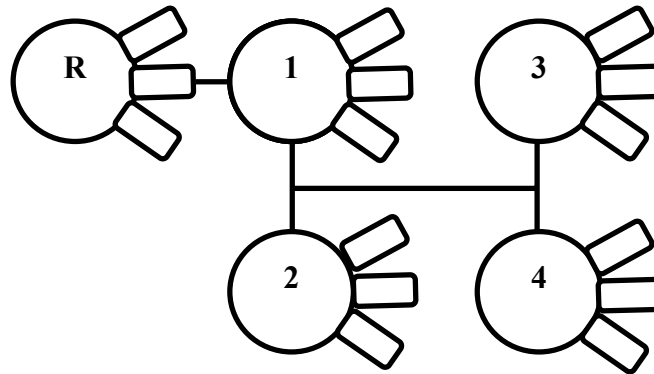
On the split boxes the smaller switch on the gearstick operates the splitter. On some boxes the range switch takes the form of a sliding ring.

Non-synchromesh boxes (crash)

There are two main types of crash boxes found in UK vehicles. The first is the Fuller 9 or 13 speed. This looks like the nine speed Scandinavian box, but trying to drive it the same way produces loud noises. When driving set off normally, but when making a shift up, depress the clutch, move into neutral, allow the revs to drop, depress the clutch, and select the gear. When shifting down, repeat the procedure, but blip the throttle slightly to allow the engine to match speeds with the box. Unfortunately, only practice makes perfect with a crash box, but they can be driven without recourse to the clutch. Indeed, from personal experience, it’s possible to drive over a hundred miles without it, as long as you never come to a complete halt.

The other main crash box is the Eaton-Fuller Twin Splitter. This is sometimes known as “God’s Own Gearbox”, “The Poor Man’s Automatic” or sometimes “That Blasted Thing I Can’t Get The Hang Of”. Its main feature is the ability to change gear clutchlessly. It is robust, simple, and great fun to use if you know how. It has been taken off the market, but there are still plenty left in service.

This is what it looks like:



Each of the main ratios is split into 3. The splits are marked I, II, III low to high. To move off, depress the clutch, select 1/I or 1/II and raise the clutch. Now you're moving, the fun starts! To go up from 1/II to 1/III is simple. Select the split, and lift off the throttle slightly. The gearbox will drop into the new gear, and you can keep accelerating. To go up through a main ratio i.e. 1/II to 2/I, lift off the throttle while applying LIGHT pressure to the stick. It will pull through sweetly (or not) and then you can accelerate. To change down, pre-select your split, lift off the throttle just enough to take the power off the drive train and reapply. The split will drop in. Going "through the gate" takes slightly more foresight. Pre-select the split you need, then back off the throttle. Take the stick into neutral, blip the throttle about 200 extra revs per split and push through the gate. There are occasions where the black art of the "bunny hop" is required. This is used when you need to drop gears fast when fully laden on a steep ascent. Let's say you're pulling up a hill, nearly at the crest, and you're in top. The revs are at the bottom of the powerband, and if you miss the shift you're in trouble. However, you only need to drop to 4/I from 4/III i.e. 12 to 10. Back off the throttle, whip it into neutral, blip the throttle and push it back in. The reason for doing this is that if you just pre-select 4/I, back off and wait for the split to drop in, the engine speed will drop faster than the gear speed, the selector will never catch up, and you'll roll to a stop. Then you'll have to do a hill start at top weight, with cars weaving and hooting. Ever done a hill start at 38 tonnes with a 350 Cummins to pull it? I have, once. You can also bunny hop to speed up things in heavy traffic. Remember that in all circumstances, the clutch should NOT be used except when coming to rest or setting off.

Automatic and electronic boxes

These are beginning to be fitted into the prestige end of the market, mainly by Volvo and Mercedes. These boxes are very useful for taking much of the strain off every day driving, allowing more attention to be given to the antics of other road users. The Volvo I-shift and Geartronic boxes change gear automatically. The clutch remains, but the driver does not operate it. Manual selection is possible, and a power/economy switch is provided. The Mercedes Telligent box is available as a fully manual box with foot clutch, or as an automatic shift option. Its main selling point is that it will automatically select the correct gear for the road speed. This is useful for maintaining progress after unanticipated braking; just dip the clutch, push the stick back, the correct gear drops in and away you go.