Инструкция выполнения: Выполнить перевод текста «Design-specific gearboxes». Выполненное задание предоставить преподавателю Королевой Александре Андреевне на адрес электронной почты. Эл.почта: evseeva14alex@gmail.com. Работа может быть выполнена в формате txt, doc, docx или фотография, выполненной работы на бумажном носителе.

«Design-specific gearboxes»

* Shaftless

Locomotive 8-speed (+4; -4) 4-row shaftless gearbox of the Maybach Mekydro K-104 model the first three rows are responsible for 4 transfers, the fourth row is a reverse redirector. In this gearbox there are no common shafts for a set of gears, hence the name of the scheme is "shaftless". Cylindrical gears are arranged in rows in pairs on two parallel axes, like as if the shafts were all the same. Each pair of gears of the same row is in constant gearing with each other. All coaxially located gears are connected to each other by means of locking couplings, and every two couplings of two gears of the same row are switched on according to a mutually exclusive principle: when one clutch is engaged, the other is turned off. The drive shaft here is connected rigidly with its first row gear. The driven shaft is similar to its last row gear. Both shafts can be located coaxially or not coaxially, this in some way affects the calculation of gear ratios, but it does not matter, except that in case of coaxial arrangement direct transmission is possible.

* Unsynchronized

Multistage unsynchronized gearbox of an American truck tractor. By such is meant a mechanical gearbox, in the design of which there are no synchronizers (moreover, it can be either a scheme on sliding gears, in which synchronizers are impossible in principle, or a scheme on permanent gears). Shifting gears to such a gearbox requires the driver to have certain skills in independently synchronizing the angular speeds of the couplings and gears by determining the duration of the process of switching from one gear to another and parallel adjusting the speed with the gas pedal. Both that and another is usually done on the basis of sensations from the speed of movement and revolutions of the motor on the basis of applied experience of driving on a particular machine, while a tachometer can provide additional assistance.

* Cam gear

By such is meant an unsynchronized mechanical gearbox on shafts and gears of constant gearing with the inclusion of gears with clutches with a cam profile of the tooth. The difference between similar gearboxes from the same ones, but with the gears engaged by clutches with different tooth profiles, in that the cam profile allows for rougher operation when switching both in terms of synchronization of angular velocities and in terms of force impact. Moreover, all such gearboxes are more noisy, since with each alternating acceleration, the coupling can slightly rotate relative to the locked gear. Due to the fact that race cars are often equipped with similar gearboxes, where the constant presence of noise is a certain norm, gears with spur cutting are often used here, which gives even more noise, but increases the efficiency of the gearbox itself.

* Sequential KP

By sequential gearbox is meant a gearbox in which the gearshift mechanism does not allow arbitrary selection of the next gear relative to the one currently engaged, and limits the range of available gears to only one gear above and one gear below. Transition to neutral on such a gearbox is usually possible with only two gears - first and reverse (on motorcycles it is possible with first and second). Some sequential gearboxes can be equipped with mechanisms for quickly reaching neutral from any gear, but this is not the rule.