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| **Дата предоставления работы** | | *08.05.2020* |
| **Дата** | | *06.05.2020* |
| **Учебная дисциплина** | | *Английский язык* |
| **Урок №** | | *85, 86* |
| **Тема урока** | | *85. Электрификация железных дорог.*  *86. Чтение текста по теме с извлечением основной информации.* |
| **Задание** | | 1. ***Переведите выражения и их объяснения.*** 2. ***Прочитайте текст***  ***“*Railway electrification system*”.*** 3. ***Составьте пересказ текста.*** |
| **Источник (ссылка)** | | *См.прикреплённые документы* |

* [**Railway electrification in Great Britain - conductor rail systems**](http://en.academic.ru/dic.nsf/enwiki/4723970) — Railway electrification in Great Britain Conductor Rail describes the different third and fourth rail systems used and their history. History Railway electrification as a means of traction emerged at the end of the nineteenth century.
* [**Railway electrification in Great Britain**](http://en.academic.ru/dic.nsf/enwiki/3196800) — describes the past and present electrification systems used to supply traction current to railways and tramways in Great Britain with a chronological record of development, a list of lines using each system, and a history.
* [**Central Organization for Railway Electrification**](http://en.academic.ru/dic.nsf/enwiki/11578729) — Central Organization for Railway Electrification Type Government Owned Industry Railways and Locomotives .
* [**Auckland Railway electrification**](http://en.academic.ru/dic.nsf/enwiki/10671515) — The Auckland urban railway network is to be electrified using 25kV overhead wires. This matches the system between Hamilton Palmerston North. Wellington uses an older technology 1500VDC system.
* [**Electrification**](http://en.academic.ru/dic.nsf/enwiki/300936) — refers to the modification of a system so that it operates using electricity. Electric grid A more specific usage of the word refers to the act or process of building the necessary infrastructure to supply electric power to homes and businesses.
* [**Railway test circuit Velim**](http://en.academic.ru/dic.nsf/enwiki/5426839) — is a closed railway used to test railway cars and locomotives.
* [**Railway electric traction**](http://en.academic.ru/dic.nsf/enwiki/4722822) — Contents 1 History 2 Unit types 2.1 DC traction units 2.2 …   Wikipedia
* [**Railway signal**](http://en.academic.ru/dic.nsf/enwiki/167816) — Not to be confused with Railway signaling. A signal is a mechanical or electrical device erected beside a railway line to pass information relating to the state of the line ahead to train/engine drivers.
* [**Railway signalling**](http://en.academic.ru/dic.nsf/enwiki/167916) — Not to be confused with Railway signal. A gantry of British semaphore signals seen from the cab of a steam locomotive Railway signaling is a system used to control railway traffic safely, essentially to prevent trains from colliding.
* [**electrification**](http://useful_english.enacademic.com/41806/electrification) — noun 1. the activity of thrilling or markedly exciting some person or group • Derivationally related forms: ↑electrify • Hypernyms: ↑energizing, ↑activating, ↑activation 2. the act of providing electricity the electrification

**Railway electrification system**

**Railway electrification** supplies [electrical energy](http://en.academic.ru/dic.nsf/enwiki/951953) to railway locomotives and multiple units so they can operate without having a reciprocating engine of their own.

**Characteristics**

The main advantage of electric traction is a higher power-to-weight ratio than types such as diesel or steam that carry power generators on board. This was particularly the case when compared to steam engines and diesels of the mid-twentieth century. This results in a higher rate of acceleration and higher tractive effort on steep grades. On locomotives equipped with regenerative braking, descending steep grades requires little use of air brakes as the locomotive's traction motors become generators sending current back into the electric overhead and on-board resistors which convert the excess energy to heat.

Other advantages include the lack of exhaust fumes at point of use, less noise and lower maintenance requirements of the traction units. In countries where electricity comes primarily from non-fossil sources, such as Austria and France, electric trains also produce fewer carbon emissions than diesel trains.

If most of an existing rail network is already electrified, there are benefits to extend electrified lines to allow through-running.

The main disadvantage is the capital cost of the electrification equipment, most significant for long distance lines that do not have heavy traffic. Suburban railways with closely-spaced stations and high traffic density are the most likely to be electrified, and main lines carrying heavy and frequent traffic are also electrified in many countries.

**Third rail**

Most electrification systems use overhead wires, but third rail is an option up to about 1200 V. While use of a third rail does not require the use of DC, in practice all third-rail systems use DC because it can carry 41% more power than an AC system operating at the same peak voltage. Third rail is more compact than overhead wires and can be used in smaller-diameter tunnels, an important factor for subway systems.

Third rail systems can be designed to use top contact, side contact, or bottom contact. Top contact is less safe, as the live rail is exposed to people treading on the rail unless an insulating hood is provided. Side- and bottom-contact third rail can easily have safety shields incorporated, carried by the rail itself. Uncovered top-contact third rails are vulnerable to disruption caused by ice, snow, and fallen leaves.

DC systems are limited to relatively low voltages, and this can limit the size and speed of trains and the amount of air-conditioning the trains can provide. This may be a factor favouring overhead wires and high voltage AC, even for urban usage. In practice the top speed of trains on third-rail systems is limited to 100 mph (160 km/h) because above that speed reliable contact between the shoe and the rail cannot be maintained.

Some road operating trams (streetcars) used conduit third-rail current collection. The third rail was below street level. The tram picked up the current via a [plough](http://en.academic.ru/dic.nsf/enwiki/671183) accessed through a narrow slot in the road. In the United States, the former trolley system in Washington, D.C. was operated in this manner to avoid the unsightly wires and poles associated with electric traction. The evidence of this mode of running can still be seen on the track down the slope on the northern access to the abandoned [Kingsway Tramway Subway](http://en.academic.ru/dic.nsf/enwiki/113272) (in central London). The slot between the running rails is clearly visible. The slot can easily be confused with the similar looking slot for cable trams (indeed, in some cases, the conduit slot was originally a cable slot).

**Файл с выполненным заданием должен иметь имя:**

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**Пример: 22.04.2020\_125 -126 группа\_английский язык\_Иванов Степан**