

Our Hidden World

Struzhkova A., 11 "A"



The underground! What associations arise up at mention of this word? Crush at the stations, long boring spans between them, iterative from year to year route. But any passenger can convert an ordinary journey into a subway in a fascinating trip, if he will be attentive enough and curious. Laws, which motion of trains submit to, have the features. They distantly remind the rules of the road, but much more interesting. For example, only types of traffic-lights here are about ten. To traditional red, yellow and green signals in a subway the blue and white are added, thus on one traffic-light can burn at once a few lights.



The fastest kind of transport

- All the trains of subway run by timetable. Not a train will be overtaking or prevent the other and wait for its turn to pass. By the graph the rate of movement, time of stand at the stations, amount of trains on a line, sufficient for them to transport all people and don't form a congestion, are foreseed. Speed and amount of trains change depending on time and day of week.
- Any passenger can learn, what speed a journey will pass with, looking at a little tablet at the beginning of tunnel. If there are no special difficulties on the span, permitted speed is usually 75-85 km/h, and if ahead there is a steep slope or a lot of sharp turns (they are named of small radius), a speed limit decrease to 60 and lower.

Journey along Arbatsko-Pokrovskaya or Filevskaya lines in a being late train can grow into keen attraction. Although old trains of "E" series which there dwell yet, can not be dispersed over 90 km/h even down the slope, a journey even at a speed of 70 km/h on the winding bank of Moskva-river between the stations "Kutuzovskaya" and "Fili" will remained in memory for a long time.



Traffic signs

Almost on all lines of subway traffic-lights work. If green light shines it means that a previous train left very far and it is possible to boldly disperse to 80 km/h. Yellow with green mean that it is necessary to reduce speed to 60 km/h. Only yellow light talks that the tail of previous train hides after the next traffic-light. Red, as on the road, forbids motion. Thus its evidence will change to the determinant one not after a lapse of time, but when a road will indeed be free. Those who wish to hog will be disappointed: traffic-lights and trains are arranged in that way, so at the least exceeding of speed or attempting to pass on a red train will stop. Genius hackers can be untroubled: these devices are mechanical and not subjected to the viruses.





At sending toward outskirts on a traffic-light it is possible to see two yellow fires. They warn a machinist that a train must leave aside on a pointer.

On lines basic traffic-lights are usually disconnected, in fact trains on them are equipped the system automatic locomotive signaling and automatic control of speed (ALS-ACS) which chooses the safe rate of movement taking into account distance to the last train. Thus as a basic mean of signaling the special traffic-lights with blue signals are used. A blue light allows motion with speed, indicated on an informational tablet. Except traffic-lights in a subway there are different tablets with signs: it is pointers of end of acceleration, beginning and end of braking, slope, funny yellow flashlights of temporal limitation of speed.

Building subway

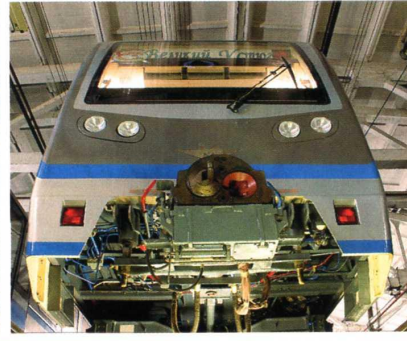
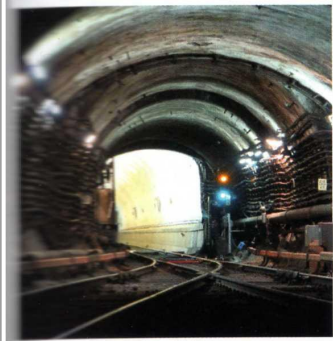
It is impossible to lay tunnels where you like. Yet in the stage of planning and building the exactly expected sizes of slopes and rises are set. In fact an electric train, even if it is equipped by super-power engines, will not be able to overcome the rise more than 60 thousandth (60 meters on the kilometer of way) - force of coupling of wheels with rails will not be enough.





Contact rail which every passenger knows about is only small part of electric communications of subway. Lines of feed, illumination, connection, pointers and traffic-lights management, ALS-ACS, communications of controllers', and also water system, drainage and ventilation are layed on the stage of planning.





Absolute majority of trains on the railway and almost half of trains in a subway are managed by a locomotive brigade, consisting of a machinist and helper. A place of helper is on the left. His duty includes to watch after signals, open and close the doors and declare stops by a tape recorder. Shut the a door and made sure that nobody had stuck in them, a helper told to machinist " Forward" and a train leaves.

Profession of machinist is one of the most exigent to the physical and psychical health. For shift the machinist of capital underground does eight-nine wheels (complete routes on a line in both directions) along dark tunnels. To save calmness and self-control by hours, response for thousands of passengers, it is needed to have steel nerves. Machinists regularly pass tests for a psychologist, which can last more than four hours. It is possible to enter consulting room as a machinist, and to go out as unemployed person.

Have a good journey!