

CERTIFICATION OF SPECIALISTS ON NON-DESTRUCTIVE TESTING OF OBJECTS RAILWAY TRANSPORT IN THE IZHEVSK STATE TECHNICAL UNIVERSITY

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An Authorized Agency and Examination Center for certification personnel on nondestructive testing of the railway transport technical objects is organized in 2008 in Izhevsk State Technical University. Center has established in accordance with “the Regulations the certification of personnel for nondestructive testing of technical objects of railway transport”. It is the fifth authorized agency in Russia, working on the rules PR 32.113. The Center was accredited Rostekhnregulirovanie and the parent organization RZD "NDT Center" in November 2008. (PCCII per.№POCC RU.0001.03H300 O-23; CCPIHK ЖТ.УО №005).

The Scope of certification are the acoustic (ultrasonic), acoustic emission, magnetic method controls following objects of railway transport:

- freight car and coach: wheelsets, components, assemblies and welded joints;
- Locomotives: wheelsets, components, assemblies and welded joints;
- Rails and turnouts in external environment and rehabilitated of rail welding enterprise;
- Welded joints of metal railway bridge construction.

Center is equipped with the necessary examination samples – wheelsets, axle wheelsets, the outer and inner rings of roller bearings, roller bearings, locking plank, coupler key, fragments of cast parts truck freight car and automatic coupling device. They all have natural and artificial models of defects. There are the segments of the rails with defects in base of rail and head of rail, and a wide range of fragments of construction with diverse types of welded joints with natural defects.

Modern defectoscopes necessary to conduct practical examinations are presented in center.

1. Ultrasonic defectoscopes УД2-102 «ПЕЛЕНГ».
2. Ultrasonic defectoscopes УД2-52.
3. Ultrasonic defectoscopes УД2-70.
4. Acoustic-emission plant СЦАД 1603.
5. Magnetic-particle defectoscopes МД-12ПС.
6. Magnetic-particle defectoscopes ПМД-70.
7. Flux-gate defectoscopes 205.30А.
8. Eddy current defectoscopes ВД-12НФМ.
9. Eddy current defectoscopes ВД113.

There are ancillary devices and subsidiary devices for control mechanization.



Fig. 1 Examiners samples and defectoscopes

Examination center is located in five buildings with total area of 120 sq.m. It contains 2 examining class for practical exams, class with 7 computer for testing, room for an oral interview and a room to store personal files and examining samples.



Fig. 2 Overview of the laboratory

Programs specific and practical exams on the first and second levels and collections issues are developed for every method control. All questions (from 100 to 250) are made in the form of tests to computerized testing. Two specialists of 3rd level at each type of control and specialists of 2 level for the relevant object control have been working in center. Specialists of the 3rd level of the other organizations was included in the composition commissions, as a rule, it is specialists of the Gorky Railway. Territorially Center is located within the Gorky Railway, therefore most specialists arriving on the certification, have been working in enterprises coach, locomotive and track facilities of this the road.

Considering that it is second center which is engaged with the specialists certification by acoustic-emission control of cast parts in the coach facilities, it is possible admit to Center of specialists of other roads of the European part of Russia. Novosibirsk Center holds the certification of specialists in nondestructive testing of parts and components for rail transport of the Urals, Siberia and the Far East.

Work is planned so that for each type of control is carried out from two to four certifications in a year. Before the examinations consultations are conducting in size of 40 hours, then three exams - theoretical, practical and special. After theoretical and special examinations the commission spends interview individually with each.

The centre is focused first of all on certification of the professionals working at the enterprises carload, locomotive and travelling facilities of the Gorki railway. In eight repair carload depots of Gorki Directorate on repair of freight cars works about 260 specialists, in locomotive repair depots – number of specialists makes to 50 persons.

In the center are specialists of the third and second level of qualification for each type of control is work. As a part of examination commissions specialists of the third level Gorki DRV work also.

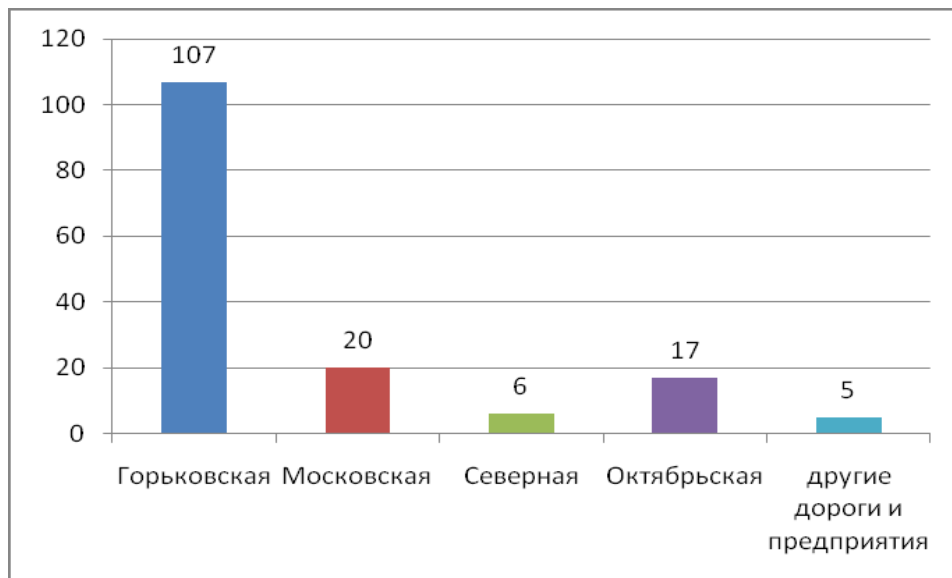


Fig. 3 Number of specialists by enterprises

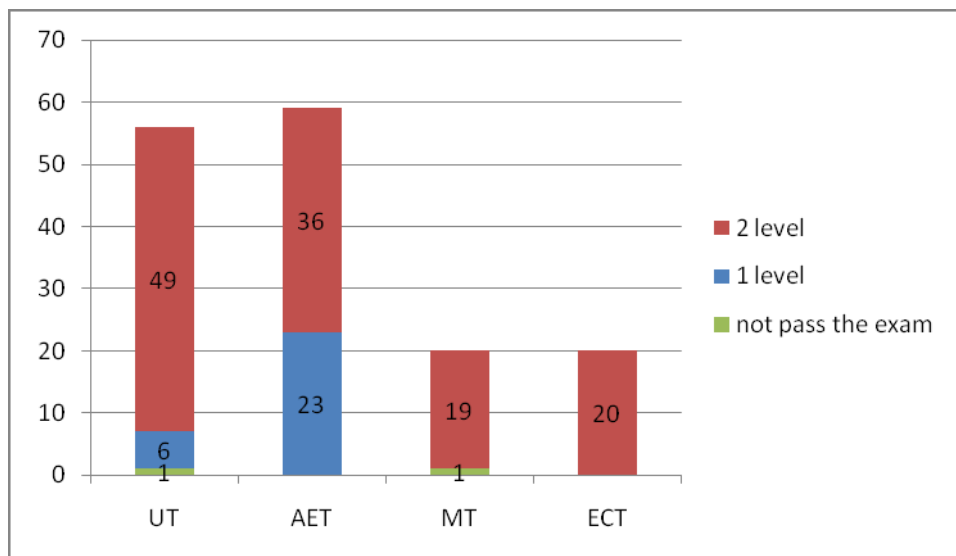


Fig.4 Number of specialists by type of NDT

Specialists of carload repair depots and factories have passed certification by the stated types of the control in number of 155 persons with Gorki, Moscow, Northern, October DRV, the enterprises of Izhevsk, Kambarka and Bryansk in 2009. From them on the first level 29 persons, on the second – 124 were certificated. On acoustic control were certified – 56 persons; acoustic-emission – 59; Magnetic – 20; Eddy-current – 20.

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