

**REPORT**  
**on Scientific and Practical and Experimental Research**  
**of DYNAMICS-100 Software and Hardware Complex**  
**January – October 2001**

**Work objective:** conduction on the basis of the Psychological Diagnostics Center of the Main Department of Internal Affairs of Saint-Petersburg and Leningrad region of scientific and practical and experimental research on assessment of Dynamics-100 complex for express diagnostics of psychophysiological and functional state of staff of the Ministry of Internal Affairs.

**Basis for conduction of the research:** Scientific and Technical Cooperation Contract No. 5/12 between the Medical Administration of the Main Department of Internal Affairs of Saint-Petersburg and Leningrad region and Innovation and Research Medical and Biological Center Dynamika as of December 11, 1998.

**Main purpose:**

Assessment of efficiency of Dynamics-100 software-hardware complex for solution of the following tasks:

1. Examination of the staff to identify persons with psychophysiological and functional deviations and explicit disorders of the psychoemotional type within the scope of the conducted military and medical expertise;
2. Evaluation of psychophysiological parameters of the staff after performance of special tasks;
3. Enhancement of rehabilitational procedure efficiency after service in “crisis spots”;
4. Identification of persons in the staff using narcotic drugs;
5. Prognosis of psychoemotional stability of the special branch staff;
6. Determination of the manifestation degree of functional state disorders in persons referred by neurologists and psychiatrists to polyclinics, hospitals and military and medical commission.

**Principle of the Method:**

Evaluated computer system Dynamics 100 developed in Saint-Petersburg Innovation and Research Medical and Biological Center Dynamika is a remote hardware and software complex meant for detection in people of informational code signs typical for “well-being” and “ill-being” of cardiovascular, vegetative and central nervous systems from the point of view of a chronobiological approach. Informational signs are derived during mathematical procession of amplitude-frequency characteristics of biological signs, in particular the cardiosignal.

Electrocardiosignal was registered in the first standard lead for 3-5 minutes in seated position. Examination results were compared with psychologists’ opinions and psychophysiological examination data.

The examined groups were comprised by special branched (Special Purpose Police Unit, Special Rapid Reaction Unit), newly joining military service in the Ministry of Internal Affairs of the Russian Federation, as well as staff during dismissal from the agencies.

**Results:**

In the examined groups 25% of persons with a reduced level of functional reserves were detected. All of them underwent advanced psychophysiological examination. As a result of examination the following groups were detected:

- 1 group non-recommended for special duty assignments;
- 2 group with minimal compliance with the normative standards;
- 3 group of persons that got through the examination program with moderate

signs of vegetative-emotional lability.

The obtained results confirmed high reliability and efficiency of Dynamics-100 software and hardware complex, fast response and objectivity in express diagnostics of the main body systems state.

Simplicity, quickness and safety of patient examination allow to efficiently conduct prophylactic medical examination of the staff.

Especially important are the results of examination of the staff sent to special duty assignments in the North Caucasus regions, before and after execution of military tasks. It allows to more qualitatively select a contingent complying with the imposed requirements, as well as to determine the scope of rehabilitation procedures upon its return.

For the period under report the total of 736 people were examined. For capacity increase it was necessary to purchase one more set of Dynamics-102 software and hardware complex with the latest version of the software program developed by Innovation and Research Medical and Biological Center Dynamika.

It is also expedient to purchase a similar complex for the polyclinic of the Main Department of Internal Affairs to assess efficiency of the conducted medical and rehabilitational procedures among the special contingent and routine medical check-up.

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