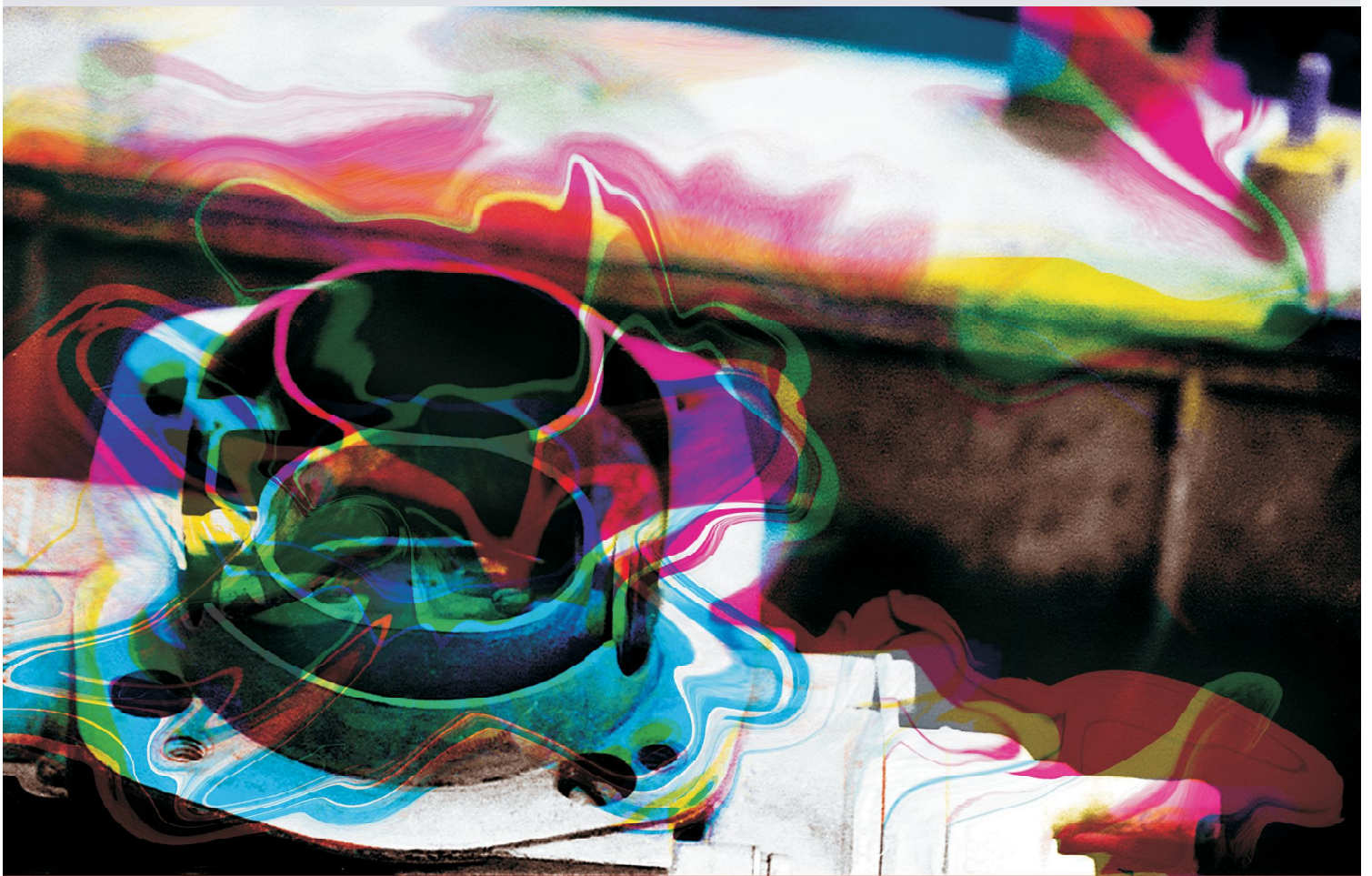


**International Congress
Motor Vehicles & Motors 2014**

**VEHICLE AS A SAFETY FACTOR
OF THE TRANSPORTATION ACTIVITY**

Proceedings of Papers



October 9th - 10th, 2014
Kragujevac, Serbia

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DETERMINATION OPTIMAL EFFECTIVENESS OF ELECTRONIC DEVICES PREVENTIVE MAINTENANCE

ABSTRACT Proper form of maintenance systems allow as to make optimization in choice of the most suitable maintenance system. Such problem may be solved if it is possible precise determination of all important requirements and constrains. The base of presented methodology make reliability parameters of analyzed technical system, obtained by monitoring of its behavior, considering real exploitation conditions, and cost of maintenance.

KEYWORDS: *devices, maintenance, optimization, availability, reliability, costs.*

INTRODUCTION

Preventive maintenance represents set of arrangements aimed to prevent failure of devices and to extend their life cycle. Set up of preventive operations requires contradict requirements: On the one hand one should increase reliability of equipments by employing preventive arrangements, which require significant time consumption, and to another hand prolonged delays of expensive devices caused with preventive maintenance are not desired from economical point of view. That is the reason that we consider here optimal conditions to manage preventive maintenance with minimal production delays.

Research in the field of preventive maintenance enable not only maintain of reliability level of radio electronic devices, provided in design and production phases, but make possible increase of that level with increasing number of prevented defects by timely detection of reasons for defects and its removal. In scientific approach to preventive maintenance is very important study of development and multiplication of defects.

CHARACTERISTICS OF DEFECTS OF PREVENTIVE MAINTAINED ELECTRONIC DEVICES

Analyzing reasons for which delays arise shows that before failure there are changes in physical chemical structure of elements, but device continue to operate in spite of some their parameters do not fulfill proposed technical conditions. Such defective parts in many cases do not cause device failure, but may be potential failure carrier.

There is possibility that in device working process one can detect and remove defects which possibly may cause failure, but which may be prevent. Some defects is not possible to detect and they cause unavoidable defects.

Defects that may be prevent are the most often defects that follow visible physical chemical changes of element structure. The main parts of these failures are those connected with relative slow changes of parts parameters and may be called "gradual failures". However it is not possible to prevent all "gradual failures", because it is not always possible to take control of inner structure and parameters of parts changes. On the other hand some sudden failures may be predicted. There are in principle possibilities to prevent some number of sudden failures on the basis of statistical laws of their appearances. Failures that may be prevented have two

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