



Forecasts of the Maintenance Activity

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Enhancing the machines' technical and technological performance through constructive improvements that allow for the automation of orders, contributes to the increasing of the production capacity of the system and for maintaining an optimal level of product costs. In order to achieve these goals, it is necessary to organize the maintenance work well, in order to quickly diagnose the malfunctions and to shorten the repair time. Given the scale of the phenomena, this paper seeks to answer two questions, namely: how will be the maintenance in future and also how to prepare this activity.

Keywords: *evolutions, future, maintenance, repairs.*

1. Introduction.

The continuous development of the production activity of an industrial enterprise requires a good organization of maintenance and repair of the equipment. This is necessary because in the production process the machine is subject to physical and moral wear.

As a result of the physical wear of the production equipment, there is a process of gradual loss of its use value. The physical wear of the production equipment is accompanied by the transfer of their value to the created products, which is recovered by selling them to different beneficiaries.

The optimum use of the production equipment requires maintenance measures to prevent the premature wear and tear, thus avoiding their removal from operation [1].

Upgrading the maintenance work, directly contributes to reducing the production costs by making these activities at a lower cost. Through a better maintenance organization is avoided the excessive wear of the machine and putting it out of service. At the same time, it increases the service life between two successive repairs, resulting in increased work productivity for the operators performing the maintenance work.

2. The future of the maintenance

A well-organized maintenance activity helps the growths of production in industrial units; therefore, in the conditions of competition, this function tends to acquire an increasingly important role.

In future, maintenance and repair workers will have a different status; they will not only have the qualifications of mechanics, but will acquire new skills in electronics and information systems.

The development of new technologies will allow the growing automation of the management, regulation and supervision of equipment operation in the process industries and the development of manufacturing industries, by automating the processing and transport operations, from an operation to another. This development has several fundamental consequences, including:

- the maintenance will ensure the continued operation of complex equipment;
- increase of production personnel qualification, which will have a growing role in monitoring the production equipment;
- reducing the number of workers.

In the definition and characterization of future maintenance, some authors state that "The maintenance function will become particularly important in the management of the unit and, if there will not evolve the existing structures this trend will increase the quality and quantity of the maintenance department and maintenance costs" [2].

According to the same opinions, based on studies carried out and tested on some industrial units, it could be taken off the main developments of maintenance in the future, shown schematically in Fig. 1.

The evolution of maintenance will be done in the following directions:

1. Application of an operational computer system for maintenance

Information is for enterprise a resource equally important as the energy, being an indispensable link between management and the operative personnel. The information system will be an effective tool to assist in the management and control of the equipment, maintenance personnel, and supply of materials and spare parts, maintenance costs, cooperation etc.

2. A better consideration of the maintenance at a stage of design, procurement and installation of the equipment in the enterprise.

The reduction of the maintenance staff is achievable by purchasing equipment for which there were provided early intervention possibilities and with low costs, since the design phase, information which can be obtained from the database of maintenance.

3. Transfer of maintenance operations called *level 1* to directly productive workers whose level of training will be higher. Through operational computerization of the maintenance, the staff will be provided with productive access to the database in order to document with the information required for level I interven-

tions on the equipment. Through this transfer of responsibilities, the production staff is provided with responsibilities and incentives, resulting in the enterprise the cost reduction with the maintenance effective.

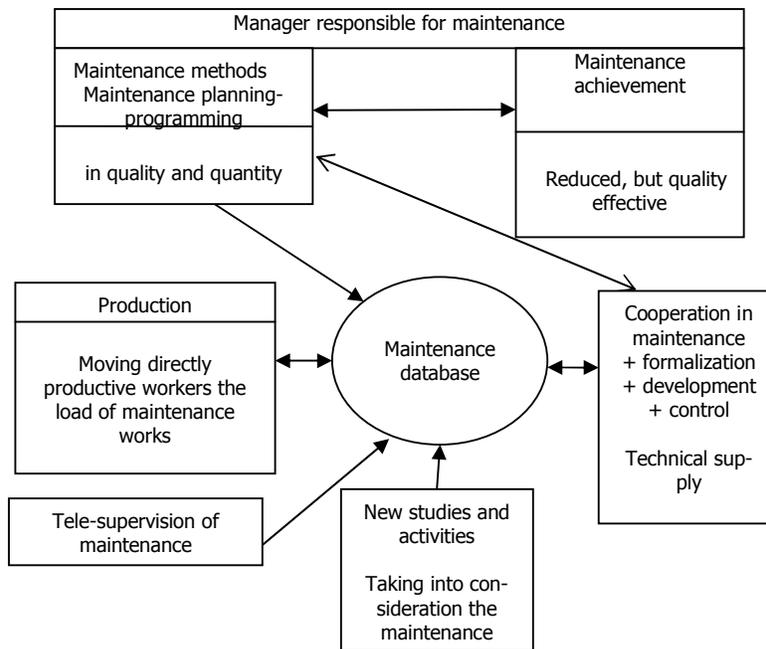


Figure. 1. Evolution of maintenance [2]

4. Development of tele-supervision systems of maintenance will result in the application of preventive or conditional maintenance systems.

The development of tele-supervision systems will facilitate the automatic updating of database maintenance and the application of conditional maintenance will reduce maintenance costs and effective.

5. The cooperation in maintenance will develop through a scientific foundation, control and good management that will allow:

- establishment among the company of a group called *methods-maintenance*;
- improving the material and technical supply activity;
- development of computerized system of maintenance and its operationalization [3], [4].

As a result of these developments it will be produced a reduction in the maintenance staff, while increasing the level of qualification. It is estimated that future maintenance is zero maintenance defects.

Achieving this limit goal in the future will not result in the abolition of the maintenance department, but only in the reduction of the executive staff [5]. The rate at which this shift will occur, will be influenced by several factors, including:

- Option of the managers to prepare for this change and the employment of the enterprise in this way;

- technical developments in equipment;
- changes to the information technology revolution;
- development of human potential, unity and adaptability to the changes.

To achieve these changes it is necessary the elaboration by the driving factors of a training program for human resources, on which will depend the speed of achieving this goal.

3. Conclusion

In our country we are witnessing now a division of large industrial units into smaller units, in which the maintenance activity was either decentralized or was transferred to production operators. This policy can bring results in short term, but in the medium and long term will lead to a degradation of the equipment.

In the specialty literature, some authors consider that the decentralization of the maintenance operations cannot be performed, unless it has a strong, well-structured, well-organized, well run maintenance and operational system maintenance. It is necessary to implement such type of maintenance to then be able to operate the necessary changes.

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