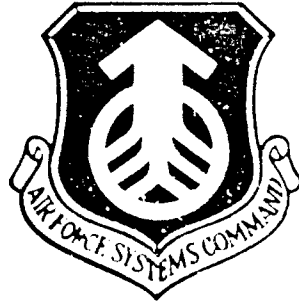


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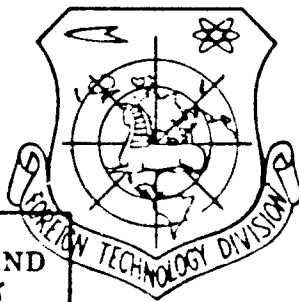
FOREIGN TECHNOLOGY DIVISION



QUALITY CAN BE CONTROLLED

by

B. Gnedenko and Ya. Sorin



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By: B. Gnedenko and Ya. Sorin

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ABSTRACT: This article summarizes the shortcomings of Soviet industries putting out inferior production goods with an emphasis in industry's reverting to the "Saratov system" for better quality control. Specific examples of inferior goods are cited with an emphasis on the benefit to the consumer.

QUALITY CAN BE CONTROLLED

B. Gnedenko and Ya. Sorin

Many economical organizations, institutions and outstanding scientists work on the improvement of a planning system in industry. But so far, not even one of the improvements has led to the point that the inherent parts of the state plan have become quantitative indices of the production quality. We still have no control system for the quality level of various objects.

An increase in quality of production, and first of all the obtainment of optimum reliability and long service life, grew into a larger a larger general state problem. N. S. Khrushchev mentioned in his report at the recent session of the Supreme Soviet of the USSR: "It is necessary within the shortest time to solve the problem of sharply increasing the quality and assortment of goods. For this purpose it is necessary to attract the most serious attention of industrial workers, of our entire society."

Yes, it is namely so: in the shortest time! Because each slowing down day means large losses on the scale of national economy. A reduction in reliability and in service life of production, as is known, is equivalent to quantitative reduction in output and reduction in

effectiveness of the entire industry. And vice versa: The extension of service life of goods may continually serve side by side as the best and most suitable way to raise this effectiveness. For example, doubling the running time of auto tires is equivalent to a quantitative doubling of their manufacture, and this is attained by a process of considerably less losses.

In October 1963 the newspaper "Izvestiya" told about the Saratov system of defectless manufacture of goods. Since then, more than three thousand representatives of various economical regions visited Saratov and Pensa institutions, and have personally become convinced about the advantages of this system. Nonetheless, today not only hundreds, but thousands and tens of thousands of industries have adopted this progressive method.

It should be clear to everyone, that the effectiveness of the Saratov system is higher the broader the sphere of its action. It will grow not in arithmetical, but faster in geometrical progression. In modern industry, the level of specialization is high. An industry manufactures reliable goods, although additional parts furnished at a later date on the completion of these goods delivered by a supplier may be faulty. A simple example - a radio receiver failing because of vacuum tubes, which the radio plant itself has not manufactured. To a user rolls over links of affiliated bonds leads to a growing chain of losses. The introduction of the Saratov system therefore, improves the production quality not only of the given industries, but also of the one with which it is connected by cooperated deliveries.

And so, the system directing industrial and construction activities into output of good production, is at our disposal.

One of these is not enough. An organizational and control system

is needed to follow the level of industrial quality of production on general state scale. We do not want to propose for this purpose, the creation of any new committees. The state committee necessary for this case is already available. They must be forced only to occupy themselves with it. We have in mind the GOSPKAN of the USSR and the Gos Committee of Standards and of Production Qualities in the USSR and add to it laws and possibilities, analogous to laws of the Gosplan of the USSR, in problems of planning and supervision over the quality of production.

Today the laws and possibilities of the Committee of Standards, its scientific-research institutions and control-checking labs are limited, and more exactly, reduced in comparison with these greater state problems which they should solve. The leaders of the committees truly consider it necessary, for example, that the committee should undertake the assurance of all interested organizations to provide them with standard reference data of physical constants and physico-chemical properties of initial materials, raw materials and complete goods. After improving the nonunderstandable causes of 1934 in our country, we discontinued the publication of official test books on initial materials and raw materials. The absence of such a state system leads to the point that planners and developers have to lose much time, forces and means, for the search of the necessary test books without which they cannot create samples of new technology. Quite often, the planner is forced to use by far unreliable information, which comes very expensive for the state.

We cannot just be satisfied with the attention and the problem of reliability services. This year the work of thousands of such services created at industrial undertakings, in construction bureaus and scientific research institutions, are not at all coordinated.

y solve one and the same problem, they open the unopened ones. It is no wonder, that the activity of these important subdivisions far from being or becoming effective, and sometimes they turn practice, into still another switchman who can be blamed for low quality and unreliability of the manufactured objects.

Branch state committees do not pay the proper attention to reliability service. Also, the State Committee on Radioelectronics of the USSR, where such services were created much earlier than other committees; and five years had already passed when they were getting ready to listen at the Conference of the Collegium the problem about the experience in their work. That is why it is advisable to place on the new State Committee of Standards and Production Quality of the USSR, a methodical leadership of reliability services development of general theoretical and methodical methods of evaluating and controlling the quality and exploitational reliability goods.

It appears to us also advisable, that during the conference of the State Committee of Standards and Production Quality of the USSR should be created a single interbranch scientific Soviet on reliability quality control problems. Then we would do away with the necessity of many other scientific Soviets, in sections, commissions and general committees, which are not being created just every day, and work by the principle "swan, crayfish and pickerel."

Such a scientific Soviet will be effective, if it will stay closely connected with scientific research institutions, where it is possible to develop theoretical problems and problems of practical reliability quality and reliability control methods. And such possibilities exist in the system of the state committee of standards. But all this, of course, requires development and considerably greater attention.

A more important economical problem is included in the search of quality and reliability indices, and then in the introduction of same into the state planning system. On this account exist individual more or less reasonable undertakings, but we still have no final system. It is more odd, that the single subject of determining the economical effectiveness, attained by increasing the reliability and long service life of machines, was found to be in order of economics excluded from the plan of scientific research operations of the economics department of the Academy of Sciences USSR. Investigations of these problems are carried out now only by general forces.

We cannot disagree with Academician A. I. Berg, when he says that optimum reliability and long service life are not given as a gift, and they are not attained without losses and other quality characteristics of goods. These losses should be not only technical, but also economically based. Just as excessive losses of materials to increase the strength of goods are not justified, so are the requirements for reliability which should not be over estimated. But at present time, we have still not attained such a position, when we can fear over estimation of reliability requirements.

For a more authentic evaluation of the reliability of manufactured goods industries should have designated testing bases well. Of enormous value is the development and broad application of accelerated testing methods.

We deeply believe in thorough possibility of developing such a state control system of the production quality level, manufactured by our socialistic industry, with which no capitalistic system quality level, manufactured by our socialistic industry, with which no capitalistic system can compare, based on competition and not on the interests of the user. But it will be possible to solve only in

conditions when the quality characteristic of production for which the manufacturer will carry a no lesser responsibility than for quantitative characteristics, and will be interested in their constant increase.