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MEMORANDUM FOR: Mr. James A. Kleastine
Soviet and Eastern European Exchanges Staff
Department of State
Washington, D. C.

SUBJECT: U.S. Delegation on Industrial Standards

1. I am sending you herewith seven packets of background reading material for the U.S. Delegation on Standards as requested during Mr. Schwiber's briefing on 3 April. In addition to information on the Soviet standards system, summarized from the briefing, the packets contain a translation of a recent Soviet analysis of the state of organization of standards in the U.S.S.R. and some materials dealing with the recent economic reforms.

2. The studies for the Joint Economic Committee of Congress have been supplied so that the delegates may read pp. 1-17 of Part I and pp. 1033-1063 of Part IV.

3. None of the enclosures is classified.

Attachments: (5)

1. The Soviet Standardization System
2. Standards and Quality in the Machine Building Industry (translation from a Soviet article)
3. Economic Reforms: A Balance Sheet
4. New Directions in the Soviet Economy, Part I
5. New Directions in the Soviet Economy, Part IV

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GROUP 1
Excluded from automatic
downgrading and
declassification

THE SOVIET STATE STANDARDIZATION SYSTEM

4 April 1967

THE SOVIET STATE STANDARDIZATION SYSTEM

Organization

The State Committee for Standards, Measures and Measuring Instruments is the focal point for guiding and coordinating standards in the USSR, and it exercises a great deal of authority and responsibility in this field. The Committee consists of a chairman, deputy chairmen and members appointed by and responsible to the Council of Ministers of the USSR. The current Chairman of the State Committee for Standards, Measures and Measuring Instruments is V. V. Boytsov. He has a degree of Doctor of Technical Sciences. The two highest officials under Boytsov are I. I. Novikov and V. V. Tkachenko.

The State Committee is divided into many departments according to functional and product responsibilities. Probably the largest of the product departments is that for machine building. The machine building industry in the USSR covers machinery for the metallurgical, chemical, and petroleum industries as well as machine tools, transportation equipment, construction equipment, agricultural equipment, etc., etc. Other product departments include the Metallurgical Division, the Chemical and Oil Products Division, the Electrotechnical Division, the Radio Electronics and Communications Division, the Light Industry Division, and the Packaging Division.

Those departments with a functional responsibility include the Measuring Technique Administration; the State Inspection Administration -- charged with the observance of the application and use of standards;

the Foreign Relations Division; and the Division of Accounting and Registration of Standards and Technical Specifications. There are other departments, the titles of which are more confusing than enlightening.

The State Committee apparatus is established throughout the Soviet Union and has offices in each Republic, with several offices in the larger, more industrialized Republics. The Committee invites scientific and educational institutions and personnel to participate in the development of standards and measures and is authorized to charge ministries, and other levels of Soviet administration with the development and revision of standards. There is -- theoretically at least -- extensive coordination among the institutions involved in setting and using the standards. Although there is probably considerable autonomy at plant, republic and branch levels in setting other than state, i.e. national, standards, the influence of the State Committee undoubtedly permeates these levels too.

The Scientific-Research Institutes

Among the institutions working on the preparation and evaluation of standards, scientific-research institutes (12 of which are indirectly controlled by the State Committee), the design bureaus and experimental bases of the institutes (experimental bases are usually scientific organizations operating at the pilot plant level) and the local state inspection laboratories, numbering about 300, are probably the most important. The most important institutes are the All-Union Scientific-Research Institute of the State Committee for Standards, Measures and

Measuring Instruments of the USSR (VNIIM), which is the chief inspection organization and prepares measuring techniques as well; the All Union Scientific Research Institute on Standardization (VNIIS) -- which is mainly concerned with preparation of the most important basic standards but is also charged with comparative analysis of the levels of standards and standardization in the USSR and foreign countries; the All-Union Scientific-Research Institute for Metrology (VMIIM), mainly concerned with measurements; the All-Union Scientific-Research Institute for Normalization in Machine Building (VNIINMASH), which, as the name suggests, specializes in standards and standardization of machinery; the All-Union Scientific Research Institute of Physical-Technical and Radiotechnical Measurements (VNIIFTRI); and the All-Union Scientific Research Institute of Technical Information, Classification, and Codification (VNIITKI). Under the last named institute is the All-Union Information Fund of Standards and Technical Specifications which is the central repository of information for standards. As of mid-1966 the fund contained 220,000 standards from more than 50 countries and this stock was expected to continue to increase rapidly. The State Committee coordinates the programs of the Institutes in order to prevent unnecessary duplication of effort. Thus VMIIM is responsible for research into mass, force, and linear measurement and VNIIFTRI is responsible for measurements of time, radio frequency, high and low temperatures, nuclear radiation, and properties of materials subject to high frequencies and voltages.

Other Departments

Also subordinate to the State Committee are a publishing house and 36 plants manufacturing sophisticated measuring instruments and repairing and evaluating imported instruments. The publishing house is nominally independent but works in conformance with a plan prepared by the Committee. It produces a monthly magazine, Standards and Quality; a monthly booklet, Measuring Techniques; a monthly Index of Standards containing revisions, new standards, and international agreements on standards; a biweekly newsletter; ad hoc handbooks; and general world information.

International Activities of State Committee

The USSR, represented by the State Committee, participates in several international organizations on standards and measures and in the work of 57 technical committees of the ISO alone. The State Committee is responsible for implementing the changeover to SI, the International System of Units, which the USSR fully supports. During the transitional period, expected to last about ten years, new units are used in parallel with the old in drawings and specifications, and students in the field of standards are tutored in both the old and new systems.

Categories of Standards

The most important are the State Standards known as GOST's. GOST is the Russian abbreviation for State All Union Standards. Almost all GOST's are approved and published by the State Committee and are obligatory on all plants throughout the Union. According to 1965 information, the only GOST's not approved by the committee were civil engineering standards

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which were approved by the State Committee (now Ministry) on Construction, and especially important standards -- perhaps military-related -- which are approved by the Council of Ministers. Almost half of the GOST's are raw material standards; a slightly smaller proportion are for machinery, equipment, and tools, and the remainder -- almost 15 percent -- are for consumer goods. In 1965 the Committee drafted a GOST-1 the so-called "Standard for Standards" which defined an extremely detailed procedure for planning, preparation, coordination, approval, registration, publication, and distribution of standards and technical requirements. Apparently GOST-1 had not yet been approved by mid-1966.

In addition to state standards, there are also republic standards (standards accepted within and among the union republics -- the largest geographic administrative divisions within the USSR), branch standards (formulated by and accepted within a branch of the economy such as the chemical industry), and plant standards. Branch and republic standards as well as GOST's are registered with the State Committee.

In terms of numbers of standards, there were (as of 1965) almost 10,000 GOST's; some 54,000 interrepublic standards, known as MRTU's; 110,000 TU's which can be issued by plants, ministries, individual republics, or public or cooperative enterprises; more than 6,000 MN's or machine building norms; and nearly 10,000 ON's which are norms of other branches of industry. The term norm is used in the USSR to designate standards for machinery and instruments (and also as a measure of worker productivity in setting wage scales). It is reported

that the use of the term norm in the context of standards will be phased out.

As part of a planned improvement in administration, the GOST's and machine building norms eventually will be combined into one system of GOST's, and the interrepublic and branch standards into one series of branch standards called OS's. GOST's, the state standards, and TU's are the most common standards.

Terminology

The Soviets use the term standardization to refer to both the process of setting standards and the process of introducing products into mass production. Specialization means the concentration of a few plants on the production of a few items in large volume, as opposed to the situation (common in the USSR) where many plants manufacture small quantities of many items. However, specialization and standardization are sometimes used interchangeably by uninformed or careless Soviet bureaucrats and technicians. Unification in the USSR refers to interchangeability between different models of standardized, mass-produced parts. Finally, there's typification, which appears to be a procedure whereby basic designs, parameters, or other specifications are provided upon which product variations can be based.

Inspection Procedures

To assure that Soviet standards are respected for products about to go into mass production the State Committee provides a rigorous testing regimen. Through its laboratories and local offices and with

the help of the Research Institutes, the Committee attempts to ensure that all prototypes are fully tested. Maintenance of factory standards is accomplished by inspectors via random sampling reportedly supplemented by a thorough test of a particular day's production once a year.

Plans

The plans to improve industrial standards are being dove-tailed with specific production goals as part of the overall economic plans in the USSR. Currently the USSR is proceeding with a plan for 1967 and a five year plan for 1966-70. The Soviet monthly magazine on standards notes that the parts of these plans relating to standards are characterized by their comprehensiveness. In fact they call for upgrading standards for almost every product. Safety and "technical esthetics" -- two factors which have been among the most severely criticized features of Soviet industrial products by Western observers -- are to be more prominent features of future Soviet standards.

Incentives

The USSR is also counting on incentives to upgrade standards. In 1964 bonuses for the introduction of better standards were set up under a national system for the awarding of prizes for the introduction of new technology. A program to tie standards to incentives via quality certification was announced in mid-1965. Under this system each factory competes for the right to place a quality symbol on its products. One symbol denotes production which meets the specifications of the state standard and is comparable to analogous foreign products; a second

symbol denotes quality equaling that of the best foreign models. The system is intended to be administered closely by the state through a State Certification Commission composed of technical experts, representatives of public organizations and consumers. The Commission will operate through the institutes and laboratories of the State Committee for Standards and will permit enterprises which achieve a certificate to increase the wholesale price of their product and to use part of the increased profits to pay bonuses. Close control is to be maintained, and if quality falters, the bonuses are to cease and the wholesale prices to be reduced. As of early 1966 the system was in operation in only 50 factories in Moscow, many of which were light industry plants. (The quality symbols are a capital C enclosing a smaller capital T. C is the Cyrillic S.) Then, in January 1966, the Committee for Standards and the Central Committee of the Trade Union of Workers of Steel Institutions set up a decoration For Service to Standardization to be awarded to workers in the field of standards for top-notch or even for conscientious consistent work.