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ECONOMIC INTELLIGENCE REPORT

ECONOMIC COORDINATION IN THE SOVIET BLOC: A PRELIMINARY EVALUATION

CIA/RR 59-32
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CENTRAL INTELLIGENCE AGENCY

OFFICE OF RESEARCH AND REPORTS

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FOREWORD

The general purpose of this report is to describe and evaluate recent and current trends in economic coordination between the USSR and the European Satellites and among the Satellites. The main emphasis is on the objectives and efforts of the USSR, primarily through the Council for Mutual Economic Assistance (CEMA), to enhance economic collaboration among the Satellites not only through increased industrial specialization and trade but also -- and most importantly -- through more effective coordination of the long-term planned development of the industrial material base of the Satellites, currently a problem area of considerable size. This report is not concerned with a quantitative analysis of the exchange of goods, capital, and people within the Soviet Bloc or of the over-all effect of such exchanges on the economies of the Satellites.

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ECONOMIC COORDINATION IN THE SOVIET BLOC: A PRELIMINARY EVALUATION*

Summary and Conclusions

After almost a decade of relative dormancy, the Council for Mutual Economic Assistance (CEMA) has been markedly active since early 1958 in its efforts to promote closer economic cooperation among the European Satellites. The impetus came largely from Khrushchev, who in April 1958 sharply criticized the inadequacy of such cooperation, which still was developing slowly in spite of steps to improve CEMA in 1956-57. This primarily Soviet drive is probably designed to contribute to Soviet industrial development, reduce drains on Soviet resources, further the economic penetration of underdeveloped countries in Asia and Africa, strengthen the Satellites economically, intensify their interdependence, enhance their political stability, and tie them even closer to the USSR.

The CEMA program is focused on two interrelated problems: how to coordinate the economic plans of the European Satellites and how to establish an effective system of industrial specialization within the Soviet Bloc. The first problem is basically one of effecting a more careful balancing of resources and requirements among the European Satellites. The second problem is one of achieving greater industrial efficiency and productivity by developing larger scale output of a reduced assortment of products in the individual countries of the Soviet Bloc.

Some officials in the European Satellites recently have admitted that the current Five Year Plans had not been coordinated effectively. Furthermore, according to other sources, these plans generally were based on unverified and sometimes unrealistic assumptions as to supplies of industrial materials within the Soviet Bloc. The USSR, however, does not appear to be seeking to integrate the entire Bloc within the framework of one master economic plan -- an ostensible purpose of CEMA when it was created in 1949 -- nor is there any indication that full integration is likely or feasible within the next few years.

* The estimates and conclusions in this report represent the best judgment of this Office as of 1 June 1959.

Current efforts to improve the coordination of economic planning have the more limited objective of insuring continued development of the industrial base of the European Satellites during 1961-65. In December 1958, at the 10th Plenum of CEMA in Prague, the conclusion apparently was reached that the ambitious goals in the preliminary draft plans of the Satellites for the period of 1961-65 could not be attained unless concerted action was taken to avert possible shortages of industrial materials, fuels, power, and equipment. The Plenum adopted a work plan for 1959 which directed the strengthened industrial committees to prepare detailed recommendations for consideration, along with revised drafts of the country plans, at the 11th Plenum* of CEMA. Guidelines through 1975 are to be coordinated during the latter part of 1959.

In promoting coordination within specific industries, CEMA will continue to stress the interrelated use of bilateral and multilateral trade agreements, joint industrial projects, standardization of designs and methods, and technical cooperation. Specialization generally is still in a beginning stage, but it may ultimately facilitate real gains in efficiency, particularly with regard to new industrial construction and technology. The Satellite regimes, as well as that of the USSR, believe that their interests can be served significantly by such efforts.

I. Introduction

Two leading avowed purposes of the Council for Mutual Economic Assistance (CEMA), when it was created in 1949, were "to coordinate the economies of the signatory countries within the framework of a general economic plan" and "to study, in each of the participating countries, the development of industries particular to that country, in order that the industries of all the signatory countries may complement each other and form a homogeneous whole." 1/** Within the first year, A.I. Mikoyan, the leading Soviet official associated with CEMA, stressed the importance of binding together the Soviet and Satellite economies. 2/ The Czechoslovak planning journal then

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* The 11th Plenum met in Albania in mid-May 1959.

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declared that CEMA members "will coordinate their plans, establish a joint investment program, begin joint output programs, /and/ coordinate industrial output ... by setting up a division of productive forces."* 3/

During the next half decade, however, the European Satellites were generally engaged in parallel and partly autarkic industrial development, contrary to the concept of division of labor. The economic relationships were primarily bilateral and mainly between the USSR and individual Satellites. Inter-Satellite exchange failed to develop on a comparable scale. CEMA received virtually no publicity and was active primarily in the field of scientific-technical collaboration.** 4/

A second general stage began in late 1954 and 1955, highlighted by a Moscow decision to synchronize and coordinate the Five Year Plans of the European Satellites beginning in 1956. In 1954, Soviet advisers reportedly were instructed to begin studies of production capacity in the Satellites, and a brief session of CEMA was called in Moscow concerning the preparation of plan coordination. 5/

The concept of plan coordination was announced publicly in 1955, with the accompanying statement that each member of CEMA had determined the contribution it could make to over-all economic development in the Soviet Bloc, but the fact was not made public that the analyses of the national planning commissions, based partly on the studies by the Soviet advisers, were uncoordinated. Each country, in estimating its potential industrial output, had assumed that those industrial materials that were unavailable from indigenous resources could be obtained

* Although the term economic integration is sometimes used in Western discussions of economic coordination of the Soviet Bloc, integration, in the sense of developing a single master plan for the Soviet Bloc, has not been a Soviet objective, nor does it appear to be at least for the next few years. In fact, if integration is taken to imply at least an extensive international movement of goods, capital, and people, a greater degree of integration probably exists in western Europe. There is very little of such integration in eastern Europe, except in the movement of goods, which, however, is restricted by the absence of effective mechanisms for short-term credits and multilateral clearing. There are only a few long-term movements of capital and even fewer movements of labor. Present and foreseeable Soviet policy, as indicated in this report, is focused largely on achieving more effective intra-Bloc coordination of the development of the key sectors of industrial materials and equipment.

** This field, although of secondary importance, is not without significance. Some aspects are mentioned in later sections of this report dealing with particular industrial sectors.

from other members of the Bloc. The combined requirements of the Satellites, however, revealed large shortages within the Bloc, especially of hard coal, iron and steel, basic chemicals, and heavy equipment. There was thus a large difference between the planning assumptions and the actual industrial prospects. 6/

This situation focused attention on the need for more vigorous steps to stimulate among members of the Soviet Bloc coordination and more efficient division of labor, especially in production of industrial materials and machinery. It was realized that such cooperation could not be promoted merely by bilateral trade treaties between members of the Bloc. 7/ A subsequent organizational step, a landmark in the evolution of Bloc coordination and of CEMA, was the creation in late 1955 of working groups for the major industrial sectors. These groups, staffed by specialists from the CEMA countries, were directed to work out proposals for industrial standardization, specialization, and coordination.

II. Key Role of CEMA Standing Committees

At the Plenum of CEMA in Berlin in May 1956, the following "Standing Committees for Economic and Scientific-Technical Cooperation" were created and their headquarters designated: Machine Building (Prague), Chemical Industry (Berlin), Ferrous Metallurgy (Moscow), Nonferrous Metallurgy (Budapest), Coal (Warsaw), Petroleum and Gas (Bucharest), Electric Power (Moscow), Wood and Cellulose (Budapest), Agriculture (Sofia) Defense Industry (Moscow)*, Foreign Trade (Moscow), Delivery of Complete Installations (Moscow),** and Geology (Moscow). Four additional committees were created in 1958: Economic Problems (Moscow), Construction (Berlin), Transportation (Warsaw), and Light and Food Industry (Prague). 8/

A committee generally is located in the CEMA country considered to be a major contributor to that sector, but the committee or its sections may convene elsewhere on special occasions. The appropriate minister of the home country usually serves as chairman and is assisted by the counterpart ministers or deputies from the other countries. Each of the committees, staffed by specialists and ad hoc personnel from the ministries and planning commissions of the host country, has the key role of preparing the detailed preliminary proposals for plan coordination,

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* The existence of this committee is not publicly admitted in the Bloc.

** This committee merged with the Committee for Foreign Trade in 1958.

specialization, and volume of trade. The largest committees are the Committee for Machine Building, the Committee for Chemical Industry, and the Committee for Foreign Trade, of which the most complex is the Committee for Machine Building, which includes sections for heavy machinery, machine tools, forging and pressing equipment, and the like. 9/

Each committee meets several times each year, and the sections and subsections meet more often. As a basis for preparing its proposals, each committee works out a detailed balance sheet by branch of industry for each country, showing on one side the total supply derived from production and imports and on the other side the estimated consumption. From this balance sheet it can be determined where there are shortages or surpluses. An effort may be made to suggest a reduction in the requirements and to work out long-term improvement of supply and distribution through increased cooperation.* 11/ The proceedings -- including disagreements as well as recommendations -- are transmitted through the secretariat of CEMA to the individual planning commissions in each country, which analyze the material relating to plans and forward the scientific-technical documentation to an appropriate department concerned with collaboration in the appropriate subject among members of the Soviet Bloc. 12/ After the planning commission and the top governmental and Party levels have reviewed the material, their reviews and recommendations are presented at the subsequent plenary session of CEMA, which works out general directives governing the future work of the committees.

With their elaborate structure and procedures, the committees have a key role in the efforts of CEMA to promote economic coordination. These committees have been characterized by a leading East German economic periodical as "the organs by which the coordinated perspective planning will be worked out." 13/

The committees, however, generally have been criticized (at least up to early 1958) for being preoccupied largely with scientific-technical exchange and other secondary questions, with too little attention being paid to the more basic problems of plan coordination and specialization, which require much detailed research and appraisal. One high official, the Czechoslovak Deputy Premier, in early 1958 characterized the committees as merely a forum for passing resolutions, with few practical accomplishments. 14/

* It is not clear whether or not the industrial committees also attempt to assess the potential supply available through trade with non-Bloc countries. One of the aims of the committees -- and of CEMA generally -- is to decrease dependence on outside countries. The Foreign Trade Committee, however, allegedly does not oppose increased trade outside the Bloc if such trade has been coordinated with the other members of CEMA. 10/

During 1958 the committees expanded their studies and discussion, both in terms of scope and detail, particularly with regard to problems of long-term economic relations involved in coordination of plans up to 1965. Their operations, however, continued to be hampered by substantial shortcomings. The material emerging from the preparatory discussion in the sections of the committees tended to be insufficiently and tardily processed. Thus the committees, in their full meetings, often formulated resolutions which were inadequately prepared and were too general to be effectively carried out by the member countries. This shortcoming applied especially to recommendations dealing with plans for development of interrelated branches of the national economies. 15/

At the 10th Plenum of CEMA in Prague in December 1958 it was decided that a special meeting of representatives to CEMA should be held at least quarterly to improve the supervision of the work of the standing committees.* The secretariat of CEMA and the deputy representatives to the Council were directed by early 1959 to work out proposals for improving work methods of the standing committees. The secretariat of CEMA was instructed to initiate in 1959 the publication of an economic information bulletin to improve the reciprocal supply of economic data among the member countries. 17/ Presumably such organizational measures will improve the functioning of the industrial committees appreciably.

III. Types of Economic Collaboration

The work of CEMA to promote economic coordination and integration may be examined meaningfully with reference to major industrial sectors.

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* CEMA comprises, in addition to the standing committees, a central secretariat in Moscow, headed by the Secretary to the Council (a member of the USSR). The Council itself includes the representatives of the member states, who began to hold plenary sessions semiannually in 1958. They generally are top planning officials and have the status of deputy premiers in their countries. There are also deputy representatives who meet more often. The total budgetary allotment for 1959 reportedly is 20.1 million rubles, of which 12.5 million are for the standing committees (as compared with 14.9 million and 8.9 million, respectively, in 1958). 16/ Bilateral economic cooperation and scientific-technical cooperation commissions are in close liaison with CEMA but are not formally part of it.

Until early 1958, Yugoslavia was invited to send observers to CEMA meetings. Communist China, North Korea, North Vietnam, and Mongolia still have only observer status in CEMA meetings but have "expressed their readiness to take an active part in the economic cooperation ... by measures conforming to the specific conditions of their countries."

Before such examination, it should be noted that there are five general types of economic collaboration: (1) bilateral and multilateral scientific and technical cooperation accords, which involve exchange of personnel, blueprints, and other data; (2) bilateral and multilateral industrial construction and production arrangements, which are sometimes on a direct interministerial or interplant basis; (3) specialization agreements, which are recommended by CEMA and sometimes are incorporated in trade pacts or in other "economic cooperation agreements" concluded during meetings of the bilateral economic commissions*; (4) bilateral and multilateral trade pacts; and (5) long-term plan coordination, which is primarily multilateral. The interrelationship of these five types of collaboration is not fully recognized by most Western analysts of this subject.

The first type has been used fairly widely during the past decade, whereas the second and third types have been emphasized mainly since 1956 and are as yet only in an early stage of development. Trade agreements continue to be the primary and most tangible means of economic collaboration. Such agreements not only provide the framework for supplying within the Soviet Bloc the material needs of the economies of the member countries of CEMA, especially those of the European Satellites, but also are used more directly as a means of giving effect to recommendations for specialization made by CEMA.** 18/

During the past several years there has been an effort, especially on the part of Soviet delegates to CEMA, to promote and increase use of multilateral trade and other economic agreements, but in late 1958 there reportedly had been only a slight decrease in bilateral agreements.*** 19/ Significantly, however, about 50 percent of all economic

* These commissions were created during the past several years, whereas the bilateral commissions for "technical and scientific collaboration" have functioned since 1949 or 1950. The latter, however, have a somewhat narrower scope, and the standing of their participants in their home governments is not so high.

** Soviet delegates to CEMA have proposed that members of CEMA integrate CEMA agreements into their national plans and thus endow them with legal force. There were some indications in late 1958 and early 1959 that this step is partly being done and that more attention is being given in 1959 in CEMA to analysis of progress in fulfillment by member nations of the CEMA recommendations.

*** Settlement of accounts continues to be a basic obstacle to multilateral agreements. A limited multilateral clearing system was agreed to at the 8th Plenum of CEMA in Warsaw in June 1957, but there is little evidence of concrete use of even this restricted system.

contacts (presumably scientific and production exchanges as well as trade) are said to be multilateral. 20/ Moreover, in recent years CEMA has sought to effect a greater coordination of bilateral inter-Satellite trade.

The precise role of CEMA in bilateral trade agreements is not entirely clear. Official statements that such agreements are "within the CEMA framework" or are "pursuant to CEMA resolutions" may be largely rhetorical flourishes. The agencies of CEMA, however, seem to have an important general role in this field, particularly at the prenegotiation stage. Before the bilateral discussions for the 1958-60 period, for example, discussion by CEMA reportedly determined which commodities should be bilaterally and which multilaterally negotiated. This information was passed on to the various foreign trade ministries. 21/ The committees of CEMA also examine the extent to which bilateral agreements solve anticipated supply problems.* Moreover, according to one official explanation, the encouragement of the bilateral approach for matters of concern to only two countries enables CEMA to concentrate on problems of more widespread application. 22/

In addition to discussing the general requirements for and supplies of basic materials and developing proposals for meeting shortages, the standing committees of CEMA also seek to provide increased statistical and clearinghouse services. Eventually the Foreign Trade Committee, for example, may provide periodically to members of CEMA detailed, coordinated trade data for the Soviet Bloc, which presumably would largely remove discrepancies between statistics of individual countries. 23/ In the important area of trade with the underdeveloped countries outside the Bloc, this committee receives reports from government trade organizations on inquiries received and offers made for sale of factory equipment and other commodities. Extensive analyses also are presented at meetings of the committee concerning the possibilities of selling complete factory installations to underdeveloped areas. Such trade information may not be complete, but the volume of the information seems to be increasing. This exchange of information may contribute to greater coordination and a lessening of intra-Bloc competition, particularly as increasing economic integration in western Europe and other pressures may cause the Bloc to evolve a more common front against Western competition.

Long-term coordination of plans is closely related to the other types of collaboration -- particularly trade and production agreements -- which provide the primary means of implementing the plans.

* Specific aspects of Satellite bilateral and multilateral relationships are discussed in the following sections dealing with key industrial sectors.

Potentially the process of plan coordination is more encompassing and intricate but as yet has not been carried far in practice. In early 1956, Khrushchev and other leaders of the Soviet Bloc declared at their Party congresses that the then announced Five Year Plans (1956-60) had been coordinated. In spite of official claims, there was little actual coordination, and such coordination as there was was confined to the discussion level of the industrial groups of CEMA, which had not been given formal status as standing committees. The higher level of the representatives of the CEMA Council and their deputies was not brought into the process. 24/

There was even a considerable delay in approving and putting into effect the largely uncoordinated plans of the individual countries. The East German Five Year Plan (1956-60), for example, was not presented in a final form until the end of 1957. By this time, there was a much clearer awareness of the impact of the shortages of basic materials, intensified by the events in late 1956 in Hungary and Poland. The 8th Plenum of CEMA in Warsaw in July 1957 was devoted mainly to the planning dilemma arising from this shortage of materials. 25/

The Warsaw session publicized the idea that CEMA was to focus more attention on a longer planning period extending to 1975 -- primarily because development of basic industries requires a long time. The members of CEMA decided to begin to draw up plans for coordination of economic development of basic industries and major products, especially coal, electric power, basic industrial materials, machine building, and chemicals. Not determined, however, was the comprehensiveness of this coordinated planning as to types of products and branches of industry. The initial stage of 1961-65 would be planned more specifically and the second stage of 10 years, only in general terms.* This plenary session and later ones would develop general guidelines only. The detailed proposals for coordination would be worked out by the standing committees, which would transmit them to the state planning commission. These agencies presumably would revise their plans accordingly for later consideration by a plenary session of CEMA. The proposals would contain some suggestions for industrial specialization. The newly created Committee for Economic Problems of CEMA was assigned a key role in this work.

At meetings in the autumn of 1957, at the level of this committee and of the chairmen of the state planning commissions, two general attitudes reportedly were expressed concerning the basic approach to be followed in long-term coordination of plans. East German delegates, with support from their Soviet and Czechoslovak counterparts, emphasized discussion of the development of production sectors, at least as a point of departure, whereas the Polish representatives stressed discussion of

* Recently the idea of a single, long-term plan for the entire Soviet Bloc has been voiced less than in earlier years.

foreign trade. 26/ Poland generally has been less favorable to the concept of broad integration than its relatively more industrialized neighbors have been.*

In spite of the stepped-up frequency of meetings, especially of the standing committees, progress in late 1957 and early 1958 was slow and unsatisfactory. In a speech at Csepel, Hungary, in early April 1958, Khrushchev expressed dissatisfaction with the extent of economic cooperation within the Soviet Bloc, especially inter-Satellite cooperation. Subsequently, an unprecedented meeting of top Party and government leaders of the members of CEMA was held from 20 to 23 May in Moscow. The conferees (1) agreed on "recommendations on further development of economic cooperation ... specialization of production and on the preparation of long-range national economic development plans"; (2) stressed the development of the material branches, power, new machinery and techniques, and further cooperation and specialization in machine building, to make it possible "to go over to the more rational mass and serial production"; and (3) decided "to enhance the role of CEMA and its agencies." 27/

As a follow-up the 9th Plenum was held in Bucharest in late June 1958, and the 10th Plenum was held in Prague in early December, marking a new policy of convening at least two top-level sessions per year. At the 10th Plenum it was indicated that the Soviet bilateral negotiations with the European Satellites for 1961-65 had been concluded satisfactorily. A considerably less favorable picture, however, was presented of the uncompleted inter-Satellite negotiations. In these negotiations "a number of economic problems" arose, especially concerning the future supply of certain nonferrous metals and minerals, certain ferrous rolled products, equipment (especially chemical), coking coals, electric power, and mineral fertilizer. 28/ The emphasis seems to have been primarily on inadequate coordination among the Satellites in working out their respective production and consumption of such materials and products. The indicated possibility of shortages would affect the projected priority development, particularly of such industrial sectors as the chemical sector.

The USSR occasionally has made up deficits of industrial materials stemming from the nonimplementation of inter-Satellite commitments. Possibly the USSR would do this again, but it evidently fears that the Satellites may continue to rely excessively on Soviet supply and may fail to strive with sufficient vigor for a more rational pattern of utilization of indigenous and substitute materials and of exchange within the Soviet Bloc. In order to promote more coordination and integration,

* For further discussion of this subject, see IV, p. 11, below.

the 10th Plenum adopted a work plan for 1959, which among other things instructed the standing committees of CEMA to develop detailed proposals for the problem areas.*

IV. Machine Building Industry

Machine building, basic to industrial development and with a wide range of products, is generally considered to offer the best prospects for division of labor within the Soviet Bloc. This sector is contributing an increasingly important share of total industrial production in most of the European Satellites. The percentage share in each of the Satellites in 1957, according to a Soviet tabulation, was as follows: East Germany, 31.7; Czechoslovakia, 26.6; Hungary, 20.6; Poland 17.9; Rumania, 16.2; and Bulgaria, 12.8. 29/

Moreover, products of this sector have, in general, a major and increasing role in the foreign trade of most of the Satellites, as indicated by a Soviet tabulation of this sector's percentage share of total exports of the following countries 30/:

	Percent	
Country	1950	1957
East Germany	28.0**	43.8
Czechoslovakia	26.4	40.9
Hungary	22.5	38.5
USSR	35.3	25.9
Poland	7.8	20.0
Rumania	4.2	10.5
Bulgaria		7.5

By excluding the few years just before 1957, the tabulation does gloss over some fluctuations. It does not show, for example, that the percentage share in Czechoslovakia was actually slightly higher earlier: 42.4 in 1953, 38.5 in 1954, 43.5 in 1955, and 40.3 in 1956. 31/ The general trend, however, has been upward in all the European Satellites and will probably continue to rise somewhat in most. Thus in Poland the share in 1958 was

* Collaboration is also being promoted increasingly by committees of CEMA in transportation, telecommunications, construction, light and food industry, agriculture, and probably in defense industry. This report, however, is focused on the problem areas especially emphasized in recent plenary sessions.

** The total on which this percentage is based does not include reparations deliveries.

26 percent and is slated to increase to 38 percent by 1965. 32/ In those countries of CEMA with the most developed machine building industries -- East Germany and Czechoslovakia -- the future percentage increase may be appreciable but will be less marked.

Several potential advantages of greater specialization have been particularly stressed since early 1958, especially by Czechoslovak and Polish spokesmen. Much attention is being focused on the problem of reduction of cost. It has been conceded that the earlier policy of relative autarky, with its emphasis on generally small unit output of a wide assortment of products, led to inefficiency and high cost, especially in the machinery industries. This situation, although serious in East Germany and Czechoslovakia, became even more aggravated in the other European Satellites, which have relatively less well-developed machinery industries. 33/

Czechoslovak and Polish writers hold that costs can be reduced significantly only by introducing a larger volume of production of a reduced assortment of products, which would be made possible by increased intra-Bloc industrial specialization and coordination.* 36/ Discussions in CEMA on engineering specialization for the planning period up to 1965 allegedly envision a reduction of 23 percent in the number of types of products in production (presumably in the European Satellites), which will permit an increased volume of series production and great savings. 37/

In Czechoslovakia, for example, machine building was criticized in 1958 by official spokesmen as "scattered and consequently wasteful" with "mass production" accounting for only 15 percent of the entire output. 38/ It was charged that in this industry the policy of manufacturing 80 percent of the total range of world types had an adverse influence on productivity and cost,** and it is planned to reduce this range considerably and to step up the volume of production in the smaller range. 40/ The success of this policy in the next few years will depend on the implementation of CEMA agreements and especially on Soviet support. According to the Minister of Heavy Engineering, the 1961-65 trade agreement will enable Czechoslovak deliveries to be made to the USSR "in unusually large series and spread over several years." Although the range of goods is to become more limited, the volume of deliveries is to be more than double that of 1957. 41/ Total exports of engineering equipment reportedly will increase by 1965 to 3.5 times the level of 1957. The agreement will "make it possible for Czechoslovakia to produce electric and diesel-electric locomotives

* Series production is usually mentioned, but the current forms of limited serial output (automotive, for example) are not necessarily considered satisfactory. 34/ Some singly produced items such as electric locomotives would be manufactured on a small-series basis. 35/

** One reason for this "overexpansion" was said to be the US embargo. 39/

electric power equipment, machine tools, equipment for the chemical and food industry, automobiles, compressors, and other products in greater quantities and much more efficiently. The USSR, for its part, will deliver engineering products to Czechoslovakia, which Czechoslovakia will not produce itself because of specialization."* 43/

Even during the past several years, some specialization in the Czechoslovak machinery industry has been engendered by sizable and continuing Soviet orders for specific models, produced to a considerable extent on the basis of Soviet designs and specifications. 44/ This type of aid, which relates primarily to heavy machinery, serves the industrial build-up of the USSR, however, and tends to integrate the Czechoslovak engineering industry more closely with that of the USSR.**

A related advantage of specialization also stressed by Czechoslovak and other spokesmen is that it can facilitate efforts to improve technology and organization of production. 45/ Greater specialization in the development of new and specialized machines offers "extraordinary savings" and accelerated innovation. For example, the head of the Czechoslovak Institute of Machine Tools has stated that such machines will be a basic factor in the development of the Czechoslovak machinery industry. 46/

It also has been emphasized by Czechoslovak spokesmen that specialization is not related solely to an increase in series production, which will take time. Even under existing conditions, if specialized production of universal components such as traction wheels, belts, geared wheels, and the like were subdivided among the members of CEMA, savings would result. 47/ An effort to introduce within the Soviet Bloc widespread specialization of this type, however, would have to overcome the strong reluctance of plant managers to become dependent on suppliers in another country. There is even resistance to increased interplant specialization and cooperation within one country, such as in Poland and, on a broader scale, the USSR. 48/

Although there were some scattered instances of specialization before 1956, a broad start seemingly was made at the 7th plenary session of CEMA

* Elsewhere the chairman of the Czechoslovak State Planning Office referred in mid-1958 to "the rapidly growing imports /from the USSR/ of engineering products ... whose production has not been started in Czechoslovakia as, for example, equipment for cold-sheet rolling, some construction and highway machinery, heavy crawler tractors, silage combines for corn, and various types of machine tools." 42/

** The total trade with the USSR significantly is slated to increase from 33.8 percent in 1957 to 41.8 percent in 1965, trade with other Bloc countries is to decline slightly (33.6 percent to 32.2 percent), and trade with countries outside the Bloc is to drop from 32.6 percent to 26.0 percent.

in East Berlin in May 1956, when recommendations developed in February and March by more than 300 specialists were reviewed.* 50/ According to various brief official statements, agreement was reached on specialization for 600 products. Elsewhere reference has been made to "90 types of machines, ships, and precision instruments" and to "14 groups of power equipment, 23 groups of diesel motors, 69 groups of cutting machine tools, 110 types of forging and pressing equipment, 15 types of agricultural machines and tractors, 13 models of diesel locomotives, trucks and passenger automobiles, motor buses, railroad cars and other types of machines and equipment." 51/

Although an official list (if such exists) of the recommendations made in 1956 (and subsequently) has not been obtained, a general picture of the recommended specialization has been developed from various incomplete source statements.** Several basic qualifications should be noted: (1) the specialization does not relate to entire industries or machinery sectors but rather to types and sizes of machines 52/; (2) the table does not portray the more detailed specialization as to types and sizes within some commodities such as ball bearings; (3) much of the specialization is not new but rather derived from historical specialties; (4) the USSR is not to become significantly dependent on other Bloc countries, although it is to become the sole producer of some large and special types; (5) in a few instances a country apparently not "assigned" as producer has continued to make a product (for example, Rumania continues to produce grain combines).

The sketchy tabulation gives a surface impression of widespread progress of specialization, particularly in the categories of heavy machinery, machine tools, transportation machinery, motor vehicles, tractors, and agricultural machinery. In many instances, however, several countries -- notably East Germany and Czechoslovakia -- are "confirmed" as producers of types and sizes which they had developed previously.

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* The CEMA Committee for Machine Building, created in 1956, has a sizable staff and headquarters in Prague, with 11 major sections: (1) Heavy Machinery (East German chairman); (2) Machine Tools, Forging, and Pressing Equipment (Soviet chairman); (3) Transportation Machinery (Hungarian chairman); (4) Shipbuilding (Polish chairman); (5) Road Building Machinery and Equipment (Polish chairman); (6) General Machinery (East German chairman) (equipment for light, food, and paper industries); (7) Motor Vehicle, Tractor, and Agricultural Machinery (Czechoslovak chairman); (8) Appliances and Automatic Equipment (East German chairman); (9) Radio Technology and Means of Communication (Hungarian chairman); (10) Electrotechnical (Czechoslovak chairman); and (11) Ball Bearings and Standard Parts (East German chairman). 49/

** See Appendix A.

Some modifications, involving at least a beginning of an extensive "division of labor," have been proposed. In 1956, for example, CEMA recommended "a certain specialization" in production of machine tools, which would involve a reduction in the number of types: from 62 to 42 in Czechoslovakia, from 64 to 56 in East Germany, from 40 to 35 in Poland, and from 20 to 16 in Hungary. 53/ The nature and methods of such reduction was not indicated, nor was there any indication as to whether or not such a reduction, if carried out, would result in a significant cutback in established production by any CEMA member. There is no evidence that such reductions have yet been undertaken on an appreciable scale, but presumably they could be effected only gradually over a period of some years.*

In May 1958 a leading Soviet official criticized the insufficiency of specialization by referring to the very limited trade with the Soviet Bloc in machinery and equipment in comparison with production. During 1957, less than 5 percent of the 70,000** cutting machine tools and less than 3 percent of the 24,000 forging and pressing units*** produced in the eastern European CEMA countries were mutually traded. 56/ Similarly, only 8 percent of production in these countries of 47,000 trucks and 13 percent (almost entirely from Czechoslovakia) of the 39,000 tractors were exported to other European Satellites.****

When used as a critique of specialization, however, the Soviet relationship between production and trade does not provide a clear picture of the accomplishment and potential of specialization. In the cited cases, the percentage of production reportedly involved in trade among

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* In late July 1958 the Soviet deputy representative to CEMA publicly acknowledged that specialization and cooperation "has not been adequately developed" and stated that the 9th Plenum of CEMA in June 1958 had drawn "particular attention to the need for greater specialization and cooperation in engineering and the manufacture of new products." 54/ In his discussion of the Polish plan directives for 1959-65, Jedrychowski, the head of the Polish Planning Commission, stated in March 1959 that "a division of work exists (among the USSR, East Germany, Czechoslovakia, and Poland) in the production and exchange of lathes." He added that such examples constitute "only a beginning of economic cooperation in this field" (industry generally). 55/

** Slightly more than one-half of the production in the USSR.

*** The figures reported officially by the individual countries total approximately 20,000. Possibly the difference can be attributed to accumulated upward rounding of totals and to production for the military not shown by individual countries.

**** This critique did not refer to exports to countries outside the Soviet Bloc. The main thesis, however, was unnecessary parallel production.

the European Satellites certainly is strikingly low. The critique, however, does not indicate either (1) what the percentage should have been if the CEMA recommendations had been fully implemented or (2) what maximum percentage could be developed realistically. Data are probably not yet available to CEMA officials to permit even rough estimates of this nature.

Writers in the Soviet Bloc admit that even the relatively less difficult but nevertheless formidable problem of developing over-all comparisons between industrial production and existing export is far from a solution. Major difficulties arise from differences in the pricing and valuation of domestic and foreign trade and from terminological differences in classification of goods. 57/ Although over-all relationships between production and trade are generally lacking, some scattered tentative estimates have been made of categories, especially within the machine building sector. Thus it was said in Czechoslovakia in early 1958 that one-third of the output of heavy engineering is designated for export. 58/ In East Germany since 1953 an average of one-third of the unit production of metalworking tools has been exported annually. In Poland the share of export sales in the total sales of the metal and machinery industry in 1957 was estimated at 8.3 percent. 59/ For certain products such as textile machinery, however, the percentage was much higher.

Soviet criticism also has pointed out that in a number of cases a CEMA member has initiated production without the necessary materials and assemblies, with only a limited domestic requirement for the product, and in spite of the fact that production of the item had been established previously in other CEMA countries. Unsatisfactory development of specialization and cooperation in production was attributed partly to the "feeble effort" to work out a proper foundation. The CEMA Committee on Economic Problems was directed to develop such a foundation, with the aid of the CEMA standing committees and of the scientific organizations of the CEMA members.

The problems of developing general criteria for specialization and studying in detail the feasibility of greater specialization within industrial sectors have been emphasized earlier by economists and industrial technicians of the Soviet Bloc. Kaigl, a leading Czechoslovak economist and member of the CEMA Committee for Economic Problems, admitted in March 1958 that the whole subject of criteria has been examined insufficiently. He suggested the following as general criteria (not yet elaborated and still under intensive study): (1) assessment of each country's natural resources, production capacity, traditions, and labor skills and (2) analysis of comparative costs and labor productivity. The latter analysis, however, should make allowance for the special problems of the less developed CEMA countries (especially the Balkan states), with some effort to calculate potential future costs after attainment of a higher

level of development. He conceded that the differences in price systems presented great difficulties.* 61/

The less industrialized CEMA countries have been concerned that the integration program might hold them to the role of mere suppliers of foodstuffs and industrial raw materials. In an effort to avert such concern, the communiqué of the Moscow meeting in May 1958 declared that it was necessary "to discuss together the most advantageous forms of cooperation for raising the level of industrialization of countries with less well developed industries." Khrushchev has made similar statements, which suggest that Soviet policy seeks to promote specialization consistent with continued rapid industrialization of all countries of the Soviet Bloc although in different ways. In the short run, however, this policy would tend to limit the degree of specialization. This policy, if reasonably successful, would not only strengthen the weakest Satellites but would also promote Bloc-wide development in lieu of the evolution of strong bilateral or trilateral regional groupings, which might tend to be significantly independent of the USSR.**

Another factor underlying poor implementation of specialization is the ever-present inter-Satellite competition and deep reluctance to abandon output, especially in the machinery field, of a product in which a sizable stake has been developed. If such a stake has not been built up in a country, it may comply with a CEMA agreement, primarily because compliance is not costly and the creation of the new production might be unsound. East Germany, for example, abandoned a plan to build large horizontal boring machines and adhered to a CEMA agreement that Czechoslovakia would produce the larger machines. 62/ East Germany, however, had not actually built the facilities and had real interest only in the sizes designated as its "specialty". Similarly, with regard to the publicized Czechoslovak "resignation of her rights to the manufacture of the self-propelled grain combine in favor of Hungary" by 1960, 63/ the former had not been an important producer.

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* In Poland the Socialist Market Section of the Laboratory of Economic Research (created in the Ministry of Foreign Trade in July 1958) has the mission of analyzing the scope and criteria of intra-Bloc division of labor. At a meeting in Prague in December 1958 of Sino-Soviet Bloc delegates invited by the Czechoslovak Institute for Economic Sciences, it was decided that the various country institutes would prepare drafts on "the theoretical foundations and perspectives on the development of the international division of labor among the socialist countries." The discussion, presumably to be held in 1960, is to deal with general principles and the position of individual countries and economic branches. 60/

** See pp. 31-32, below.

In other instances, however, a CEMA member has refused to withdraw from production of a machinery model or type, which it is producing on a very inefficient or costly basis and which logically should be manufactured largely by other CEMA countries. Poland, for example, has successfully resisted a view advanced in CEMA discussions that it should not develop extensively in the automotive field, which Czechoslovakia and East Germany generally have developed more efficiently. The Soviet delegates reportedly did not attempt to influence or resolve the issue. 64/ In such cases the greatest obstacle to coordination is the fear of a CEMA member of having rigidity imposed on its industrial structure. It is sometimes argued in the Soviet Bloc that greater efficiency could later be achieved, in order to justify the continuance of autarkic policies which appear to involve a misallocation of resources in the short run. 65/

A rough general pattern of specialization was recommended in 1956 for automobiles, trucks, and buses,* which, however, would not entail on the whole a sharp departure from the existing pattern. There have been some isolated instances -- or at least appearances -- of curtailment or abandonment of production in accord with this recommended general pattern. For example, the East German Werdau plant reportedly ceased output of heavy passenger buses and shipped its machinery and equipment to Ikarus in Hungary and to Skoda in Czechoslovakia. 66/ In this instance however, special factors (especially a shift largely to military output) dictated this step by Werdau. In early 1959, Poland announced that it had arranged with Czechoslovakia to import a chassis of the Skoda type to be used in producing Polish buses. 67/ It is not clear, however, whether the importation of this chassis will be sizable or whether this importation will mean any diminution of current or planned Czechoslovak work in bus assembly.

The sector of transportation machine building (railroad equipment) also seems to be susceptible of considerable division of labor, but the actual record of agreements* appears to be largely a confirmation of historical specialization, involving considerable duplication among the CEMA states. Reportedly, however, future production plans for such items as diesel locomotives involve some specialization as to sizes. 68/

According to another recommendation, steam turbines of from 50,000 kilowatts (kw) to 100,000 kw would be produced only in the USSR, East Germany, and Czechoslovakia, and the less industrialized countries would not attempt to enter this field. The largest, more than 100,000 kw, would be made only by the USSR. This recommendation seems generally to have been followed, although in mid-1958 East Germany announced preparations to build a 200,000-kw turbine. 69/

* See Appendix A.

In these and other instances the recommended specialization seems to relate primarily to the creation of new production facilities and new products and would not involve a significant curtailment or abandonment of existing output. Thus, in referring to the discussion of specialization in machine building at the CEMA Plenum in Bucharest in mid-1958, the Polish Deputy Premier, Jarosewicz, said that "special attention was paid to specialization in the production of new goods, of which so far insufficient quantities have been produced." This statement was related to the necessity for increasing series production. 70/

Thus far, collaboration in machine building has generally been more active in standardization and technological exchange than in strict specialization of production. In January 1957, CEMA sponsored a conference in Prague, reportedly for the purpose of coordinating the development, design, and production of machine tools in the Soviet Bloc. The conference recommended that machine tools be standardized and that new designs be coordinated by CEMA.* 72/ The Institute for Machine Tools in Karl-Marx-Stadt, East Germany, has been designated by CEMA to standardize machine tool models.

At a later, mid-1958 conference of the Soviet Bloc on "Specialization in the production of metal /cutting/ machine tools, woodworking machines, and forge and foundry installations" held in the Soviet Scientific Research Institute of Metal /cutting/ Machine Tools in Moscow, recommendations were worked out for "broadening the specialization of production, which would enable a more rational use to be made of production capacity, research workers, and constructors ... ." The conference also recommended "the expansion and distribution of production" of automatic machine tools, machine tool aggregates, automatic lines, and specialized machine tools with a high output. 73/

Standardization of steel rolled sections and estimated resultant saving of steel was also a subject of discussion by the CEMA Machine Building Committee in late 1958. 74/ This committee also adopted recommendations for coordinating plans for research and development projects, 75/ particularly with reference to chemical equipment. 76/ Moreover, it has been emphasized that such collaboration within the Soviet Bloc will facilitate more effective specialization and technological progress of enterprises within an industry -- for example, of the machine tool industry in East Germany.** 77/

* The CEMA Plenum in East Berlin in May 1956 reportedly adopted resolutions on "problems of technical development," which, among other things, discussed the reduction of obsolescence of metal-cutting machines and machines and improvements of technology. 71/

** Direct cooperation among several plants in different CEMA countries, involving some modification of the product mix, also has developed on a limited scale.

During the last several years, cooperation within the Soviet Bloc also has developed significantly with regard to engineering and industrial projects in the underdeveloped countries. The most important instances are the Soviet-Egyptian and Soviet-Syrian economic aid agreements in 1958, in which the USSR arranged to subcontract segments of Soviet projects to individual European Satellites or to have several of them collaborate in complex projects. The USSR probably exercises overall control but encourages the Satellites to initiate contracts and execute the projects of interest to them. The United Arab Republic probably will make the long-term payments to the USSR, which will settle with the Satellites in a shorter period of time. This system has the advantage to Moscow of facilitating a coordinated and more effective penetration program, while strengthening the Satellite economies and promoting specialization in some types of engineering equipment and services. Such activity is coordinated generally by the CEMA Committee for Foreign Trade and the secretariat, probably with the participation of the Committee for Machine Building. The Soviet State Committee for Foreign Economic Relations also has a prominent role, perhaps handling much of the detailed implementation and insuring Soviet control. In late February 1959 the State Committee for Foreign Economic Relations reportedly told the country planning commissions that the construction of the Aswan Dam, an important part of the Soviet-Egyptian agreement, is a task for CEMA rather than for the USSR alone. 78/

V. Metallurgical Industry

The work of the CEMA Committee for Ferrous Metallurgy* has focused on two general groups of problems -- technological improvement and critical supply situations. The technological discussions may have rather general application, or they may relate primarily to a particular plant. The former type is illustrated by a meeting of the coke chemical section in Prague at the end of October 1958, which, among other things, agreed on a system of classification of grades of hard coking coal and discussed the recommendations of experts regarding technological improvement. 80/ An example of specific plant discussion is a joint meeting in April 1958 of the pig iron and ore dressing sections at the Danube Metallurgical Combine, Stalinvaros, Hungary, to examine suggestions for improvement of the operation of the blast furnace and agglomerating plant. 81/ Polish specialists, among others, figured prominently. Chinese Communist delegates have observed such discussions, although mainly at meetings of the full committee. They eventually may participate more actively. 82/

* This committee, with headquarters in Moscow, reportedly has the following sections: coke chemistry, pig iron, ore dressing, rolled material, steel plants, material distribution, technical problems of plant equipment, research and training, and foreign trade problems. 79/

In the area of supply problems, the committee is assuming an increasingly prominent role. A major objective seems to be to develop a realistic picture of short- and long-term deficits of critical items and to recommend appropriate policies for consumption, industrial development, plant construction, trade, and specialization. Considerable attention, for example, was devoted to anticipated shortages of certain grades of coking coal, a problem which is expected to be solved only to some extent by the 1958-60 bilateral agreements. 83/ It is doubtful, however, that specific allocations are recommended to be carried out by these bilateral agreements.*

The initial basic step of acquiring realistic data from the CEMA members evidently has entailed difficulties for the Committee for Ferrous Metallurgy -- a problem shared by the other committees. With regard to steel pipe, for instance, information presented to the committee in the summer of 1958 indicated an expected shortage by 1965 of 37,000 metric tons,** but a reappraisal by November yielded a corrected estimate of 107,000 tons.*** 87/

This fact and other information underlay a series of recommendations by the committee to the 10th Plenum of CEMA (Prague, December 1958) on "specialization and cooperation" in the production of individual types of rolled products and pipes up to 1965. CEMA adopted the recommendations that the member states, in preparing their plans for 1961-65, emphasize the production of certain specified types of steel products.

The recommendations 88/ apparently related primarily to construction of new rolling mills**** and called for expansion in the output of sheet

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* It is reported that Polish delegates, in 1959 trade talks with Yugoslav representatives, referred to CEMA "allocations" of 95 percent of Polish coke as a basis for asserting inability to meet the Yugoslav request. This assertion, however, subsequently was not fully sustained by the Poles, who finally agreed to meet half of the Yugoslav request. 84/

** Tonnages are given in metric tons throughout this report.

*** During CEMA discussions in September 1957 the deficit in steel pipe production was estimated at 198,000 tons for 1958, 231,000 tons for 1959, and 236,000 tons for 1960. These totals did not make allowance for possible imports from the West. 85/ The estimated production of pipe in 1958 was 6.7 million tons in the Soviet Bloc, including 4.6 million in the USSR. 86/ The Bloc total is planned to reach 9 million tons by 1965. The anticipated deficits, although relatively small, may consist of critical types and sizes.

**** The Hungarian deputy minister of metallurgy and engineering later publicly stated that the Prague CEMA Plenum "coordinated the sets of rolls to be made ... assessed the requirements which insure the engineering industry supplies ... until 1965." He added, without amplification, that "certain countries will manufacture various types of rolled goods for all countries." 89/

steel (by Czechoslovakia, Poland, Hungary, and Bulgaria), in the output of seamless and welded pipe in small and large (more than 500 millimeters) diameters for petroleum and gas pipelines (by all CEMA countries except Bulgaria), and in the output of a wide range of other products. Presumably the emphasis on pipe relates partly to the long-term project of constructing a petroleum pipeline from the Ural-Volga region in the USSR to Poland, East Germany, Czechoslovakia, and Hungary.* In the CEMA work plan for 1959, the committee was directed to prepare further proposals for "increasing the production of ferrous metals (pig iron, steel, rolled steel, and pipe) ... and the development of the raw material base ... (iron ore, coke, refractories) ... for frugal consumption of ferrous metals and production ... of technically improved products which require less metal ... preferential increase of coking-coal resources." These proposals were to be ready for consideration at the next Plenum scheduled for April 1959 in Tirane, Albania, and actually held in mid-May. 90/

CEMA efforts to overcome the acute shortage of pipe,** a major problem in the pipeline project, may prove to be generally successful. However, the broader objective of coordinating the output of rolled products generally, even if restricted to new plant construction, would be much more difficult to achieve.

A past attempt in 1956 to work out a broad specialization and exchange of rolled products and pipe turned out to be "nothing more than a pipe dream."*** 92/ Another CEMA recommendation which was not fully implemented included a plan for Poland to concentrate largely on the production of steel sheets and plates and Czechoslovakia on the manufacture of steel tubes. 93/ It is true, however, that Poland now has the only high-speed continuous wide-strip mill in the European Satellites and that Czechoslovakia is the largest producer of pipes and tubes.

In general, each Satellite has sought self-sufficiency in the output of various iron and steel products, and CEMA efforts to coordinate output have met with relatively little success. There have been a few exceptions in which CEMA had at least an indirect effect in modifying country plans. In East Germany, for example, CEMA may have been responsible for the East German decision, in the planning for 1956-60, not to expand blast furnace facilities but rather to depend more on importation of pig iron. 94/ This policy is logical because of the lack of good-quality iron ore and other raw materials in East Germany.

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* For a discussion of this project, see VI, p. 24, below.

** These efforts may have included consideration of imports from the West, in the event of insufficient output by the Soviet Bloc, but there is no evidence that CEMA discussions dealt with this question.

*** In March 1959, however, the Polish planning chief stated: "For a number of years an exchange of various rolled /stock?/ profiles has been developing between Poland and Czechoslovakia." 91/ No details were given.

Planning for the future product mix in individual countries also seems to have been somewhat influenced, at least indirectly, by CEMA. In Czechoslovakia, for instance, the 1960 plan for rolled steel calls for an appreciable increase in the percentage of structurals and bars, whereas the Polish plan indicates a sharp drop in the percentages of these types, 95/ suggesting at least bilateral coordination, probably under CEMA sponsorship. Moreover, the East German import plan for rolled steel and pipe for 1959 and 1960 calls for a sizable increase in imports from Poland and Czechoslovakia, as well as the USSR. 96/

The future nature and intensity of intra-Bloc specialization and cooperation in ferrous metallurgy will be shaped primarily by Soviet policy, perhaps to a greater extent than in other industrial sectors. The European Satellites are becoming increasingly, perhaps overwhelmingly, dependent on the USSR as a supplier of the basic materials for ferrous metallurgy. By 1965, Czechoslovakia, for example, is to receive from the USSR 10 million tons of iron ore, three times as much as in 1957, when the USSR supplied 74 percent of the imports. 97/ In Poland, about 75 percent of the imports of ore will be from the USSR in 1959, and the dependence will become even greater as production increases. A similar situation exists for East Germany and Hungary.

The CEMA Committee for Nonferrous Metallurgy* also considers the general situation of supply and production and various technological problems, but it does not seem to discuss specific questions of cooperation and specialization as extensively as does its counterpart for ferrous metallurgy. In general, although there have been some changes in the pattern of production (for example, increased output of primary aluminum in the major European Satellites other than Hungary), the historical specializations, as governed largely by localized sources of raw materials, have continued with relatively little modification. Thus Poland remains a leading eastern European producer of zinc, Bulgaria of lead, Hungary of bauxite, and so on.

For the past few years, there has been a gradually increasing trend toward more intercountry cooperation, particularly in the processing of ores and minerals, which CEMA has stimulated at least indirectly. In Hungary the Ajka alumina-aluminum works, for example, was greatly expanded in 1955 through Soviet and Czechoslovak technological aid. 98/

Much attention has been devoted in CEMA committee meetings to cooperation within the Soviet Bloc in technological measures to improve quantity and quality of output. These discussions, however, may have

* With a secretariat in Budapest, this committee has sections for light metals, ore preparation, and probably several others.

excluded a detailed analysis of production capacity in the member countries. Such reportedly was the case in a meeting in mid-1957 of the section for preliminary processing of nonferrous metals, during which the Soviet and Polish delegates did not support a proposal by the East German, Czechoslovak, and Hungarian representatives to make known detailed data on capacity as a basis for extended cooperation in the future. 99/ Such an objection, although allegedly made on flimsy technical grounds, suggests an unwillingness to expand cooperation to the maximum. More recently, however, such reservations may have been somewhat reduced.

In late 1958 the Committee for Nonferrous Metallurgy was directed by CEMA to prepare suggestions, on the basis of analysis of the country draft plans for the period up to 1965, for increasing the resources and production of copper, aluminum, lead, nickel, and zinc. Also in collaboration with the Committee for Machine Building, the Committee for Nonferrous Metallurgy was to prepare suggestions on economizing in the consumption of nonferrous metals. These suggestions were to be ready for consideration at the scheduled April Plenum. 100/

VI. Petroleum Industry

The increasingly significant role of CEMA, as a supplement to direct Soviet European Satellite bilateral negotiations, is well illustrated by the long-term pipeline project. The projected system will transport petroleum from the Ural-Volga region in the USSR to Poland, East Germany, Czechoslovakia, and Hungary -- the latter two to be served by a southern section via western Ukraine and Uzhgorod. The system, which reportedly will be completed for Poland and East Germany by late 1963 and the other two countries by late 1964 or 1965, will permit a large build-up of petroleum refining and especially of a petrochemical industry. East Germany, scheduled to be the largest producer, will be able to raise its annual importation of petroleum from the USSR to 4.8 million tons by 1965, nearly five times as much as in 1957. An announcement in late October 1958 of a Soviet-East German agreement disclosed that Soviet specialists were then designing the pipeline project and were also to assist East Germany in the construction of a petroleum processing plant and in the foundation of a petrochemical industry "with a labor productivity 3 to 4 times as high as in our present chemical industry based on brown coal." 101/ Similar technical aid is being given by the USSR to the other Satellites concerned. 102/

During this time the CEMA committees for petroleum and gas, ferrous metallurgy, and machine building also were engaged in preliminary planning. The work in 1958 culminated in the first meeting of the working group for the petroleum pipeline on 11 December 1958, coinciding with the 10th Plenum of CEMA in Prague. The Soviet representatives presented

a series of proposals as to the procedures for planning the construction of the pipelines, the supplying of pipe and other materials, the financing of the various sections, and the timing of their completion. 103/

These proposals and the ensuing discussion suggest skillful Soviet manipulation of a combined multilateral (CEMA) and bilateral approach aimed at minimizing the effect of reservations by individual European Satellites and at securing a maximum contribution from the Satellites. The USSR, by not relying wholly on bilateral negotiations, apparently hopes to enhance the concept of an integrated group project, mutually beneficial and, by implication, calling for a greater effort by each Satellite than might otherwise be the case. Thus the Soviet program surprisingly not only envisaged each Satellite's using its own personnel and funds to build the portion of the line in its territory but also each Satellite's participating in construction of a rather lengthy portion (of perhaps 300 miles) within the USSR (from Mozyr in the Belorussian SSR to the Polish border). It was even suggested that the Satellites might participate in building the more eastern Soviet section from the Volga oilfields to Mozyr. Despite some Polish objection the Soviet program seems to have been incorporated in essence in the resolution of the CEMA Plenum.*

Follow-up action was also to be both bilateral and multilateral, with perhaps even increasing use of the latter. Thus the bilateral phases of further discussions were to be conducted largely under the aegis of CEMA. Further organizing measures during the next few months, especially relating to increasing the output of large-diameter pipe in Poland, East Germany, and Czechoslovakia, were to be worked out jointly by the four CEMA committees for petroleum and gas, ferrous metallurgy, machine building, and transportation. The Committee for Petroleum met in Bucharest during 10-17 February 1959 to discuss further the pipeline

* Poland ultimately might secure an adjustment in the terms governing the procurement of Soviet petroleum. Moreover, Poland and the other Satellites probably will secure great benefits arising from the later disposition of the petroleum and petrochemical products. To emphasize the value of the pipeline project, the Polish planning chief stated in March 1959 that "the expenditure on the import of liquid fuel will go up 8 percent, while at the same time the consumption of oil products in 1965 will go up by 220 percent, compared with 1958." 104/ The comparison is misleading because his import expenditure figure apparently excludes the cost of the crude oil and of the construction of the pipeline and new refinery. The ultimate economic gain, however, undoubtedly will be substantial.

project and other aspects of the 1959 work program.* 106/ Presumably the 11th Plenum of CEMA, held at Tirane in mid-May, reviewed the progress of these groups.

VII. Chemical Industry

The manifold activities of the CEMA Committee for Chemical Industry** have related generally to the ambitious expansion of this industry projected in almost all CEMA countries. Although this expansion began earlier the basic impetus came from the decision announced in Moscow in May 1958 to accelerate the enlargement of the industry in the USSR. It was emphasized that the program could be mutually beneficial and should be pushed simultaneously in the key European Satellites as well as in the USSR.***

The expansion would help in solving at least three general problems that limit over-all industrial development. 109/ First, the problem of short supply of raw materials and semifabricated products in the engineering industries can be partly met by extensive substitution of chemical products, especially plastics and synthetic rubber. Second, production of artificial fibers, leather, rubber, and the like can help greatly in rapidly expanding output of consumer goods. Third, chemical fertilizers in large amounts are requisite to intensification of agriculture.

From the outset in 1956 the CEMA Committee for Chemical Industry has been concerned with the current and projected production ("agreed level") and trade ("agreed volume") of the basic chemical products in

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* The Polish Central Agency for the Oil Industry had worked out by March the detailed route in Poland, and blueprints for various sections of the planned refinery at Plock had begun to arrive from the USSR. Poland's share of cost is to be about 150 million zlotys. 105/

** This committee is located in East Berlin, under the chairmanship of Dr. Winkler, head of the chemical industry department of the East German State Planning Commission. The committee, which is large, has working groups as follows: Inorganic Products, Dyestuffs, Chemical Fibers, Synthetic Rubber, Plastics, Cellulose and Paper, Tires, Lacquer and Paints, Petrochemistry, Photochemistry, Pharmaceutics, Ethyl Fluid, Phenol Waste Water Disposal, Fertilizers, Insecticides, and Long-Range Planning. 107/

*** This decision may have followed a change in Soviet CEMA policy or at least the inability of CEMA to promote specialization in a strict sense. In 1957, East Germany reportedly was designated as the CEMA member best suited to develop the chemical industry, and other members, notably Poland, were not to invest greatly in this sector but were to become more dependent on East Germany for chemicals. 108/

the European Satellites. 110/ Much of this discussion, however, implicitly confirms the natural, historical specialties of the various countries, such as potash fertilizer in East Germany and the USSR; phosphorus raw materials in the USSR; soda ash in East Germany and Poland; and coal chemicals (especially benzol and naphthalene) in the USSR, Poland, and Czechoslovakia. 111/

Comparatively few new specializations (that is, those limited to one or two countries) seem to have been recommended on a significant scale by CEMA. The general emphasis is on a broad-range simultaneous expansion of the industry in most CEMA states. The 10th Plenum of CEMA in Prague in December 1958 approved a report of the Committee for Chemical Industry in which, among other things, the following increases in chemical production were indicated for 1965 (in comparison with the level of 1958): USSR by nearly 3 times; East Germany by 2; Poland by 2.5; Czechoslovakia by 2.1; Hungary by 2; Rumania by 4; Bulgaria by 3.8. 112/ To assist this ambitious development program, the CEMA Plenum made a series of recommendations to the countries and directed the committee to continue to prepare suggestions referring to the country draft plans. The recommendations generally requested that the member countries increase prospecting for ore (phosphorus deposits, for example) or expand production of such items as cellulose.

The Plenum also endorsed a series of detailed committee recommendations concerning cooperation and specialization in the production of various products. Plastics, for example, generally are to be developed in all CEMA countries (except Albania), but certain types of plastics are to be produced by only a few countries. Similarly, synthetic rubber in general is listed for all countries except Albania, Hungary, and Bulgaria, whereas one type, butyl rubber, is indicated only for the USSR and Rumania. The emphasis appears to be on intercountry cooperation in planning new capacity and target dates for construction. One purpose is to avoid overemphasis on certain products. For instance, the total capacity indicated in the country draft plans for chloroprene rubber would greatly exceed the total demand by 1965; coordination, involving some reduction, therefore was recommended to Poland, Rumania, and Czechoslovakia. Detailed suggestions also were made with regard to chemical fibers and mineral fertilizers.

Attention was directed to the shortage of important types of chemical equipment.* The Committee for Chemical Industry was directed to collaborate with the Committee for Machine Building to prepare by April 1959

* In East Germany, more than half of the 9 billion Deutsche Mark East earmarked for the chemical industry up to 1965 is to be used for "technological equipment." 113/

an exact statement of needs for 1959-65. The two metallurgy committees are also to collaborate in investigating problems relating to the production of special steels, nonferrous metals, and alloys required for chemical equipment. As elsewhere, a considerable part of the effort relates to technological improvement. CEMA has sponsored meetings of technicians, such as one of 10 days in Dresden in September 1958 attended by 50 chemical and engineering experts from seven CEMA countries. The draft plans for 1965 include "a division of the tasks in the field of research, designing and machine building" in the chemical industry. 114/

Another area of significant collaboration stimulated by CEMA is bilateral and multilateral development projects. In 1957 and 1958, for example, East Germany and Czechoslovakia granted long-term credits to assist Poland in the development of sulfur deposits.* 116/ Significant collaboration also has been carried on with regard to the production of soda ash and the exploitation of Rumanian natural gas. Under a joint plan announced in late 1958, a plant for production of apatite is to be constructed on the Kola Peninsula in the USSR to supply the needs of Poland, East Germany, and Czechoslovakia. 117/ The 10th Plenum of CEMA made additional recommendations concerning the acceleration of this project.

One of the most publicized multilateral projects is the construction, begun in 1956, of the biggest cellulose plant in Europe in the Danube delta near Braila, Rumania. The first building phase of the project is to be completed by 1960; in the first year thereafter 200,000 tons of reed are to be processed, producing 50,000 tons of cellulose as basic material for paper or viscose and yielding various chemical byproducts. Production of cellulose ultimately will be raised to 700,000 tons. 118/ Rumania has half-shares in the project, with Czechoslovakia, East Germany, and Poland participating by supplying harvesting and processing equipment, technical aid, and facilities for land and water transport. 119/ This project is being administered generally by a mixed commission from these countries, with over-all guidance from the CEMA Committee for Wood and Cellulose, which apparently was absorbed by the Committee for Chemical Industry in 1958.

A considerable part of the chemical development program in the European Satellites is to be based on Soviet credit and supplies, especially petroleum. Although this phase is largely bilateral, it comes at least indirectly under the aegis of CEMA. Thus the director of the East German

* CEMA has stressed coordination in locating and mining sulfur but has decided that each CEMA member should cover its requirements for sulfuric acid because shipment over long distances is uneconomical. 115/

People-Owned Enterprise for Electrochemistry and Plastics referred to the Soviet credit* program for his key sector as having been worked out by CEMA, 121/ presumably in collaboration with Soviet planning and industrial leaders.

VIII. Electric Power and Coal Industries

At the May 1956 plenary session of CEMA in East Berlin it was decided that plans would be worked out by 1959 for exchange of electric power among the CEMA members by means of main connecting lines which would form a common network. 122/ Subsequently, there was created a Standing Committee for the Exchange of Electric Power and Exploitation of the Water Power of the Danube to meet primarily in Bucharest. The main function of this committee is to develop recommendations for the unification of power systems and for an increased exchange of electric power on the basis of a rational exploitation of power resources, especially to serve the countries' raw material branches of industry. The committee is also responsible for preparing suggestions for wider and more effective use of low caloric fuels in thermal powerplants and for working out plans for the complex utilization of the water power of the Danube. 123/

At a meeting of the committee in Moscow in September 1957 it was announced that the group had already adopted a decision on the construction of a number of 220-kilovolt (kv) transmission lines and a decision on the basic lines to be followed for a project to use the Danube. 124/ More recently, there has developed the concept of a basic system of 380-kv lines and supporting lines of 110 and 220. This higher voltage (380 to 400 kv) implies greater emphasis on inter-Satellite movements of electric power.

In April 1958, at Bucharest, the Power Committee "examined a report on the analysis of the development of power in the years 1951-57" and "discussed the possibilities for expanding cooperation in the period 1958-60." 125/ The committee was to submit by February 1959 a general report on further recommendations for unification of the power systems and mutual supply of electric power, a report to be discussed in April at a plenary session in Albania. 126/

CEMA discussion also has stimulated multilateral and bilateral cooperation in this field. In 1958, for example, preliminary work

* East Germany eventually will repay the loans primarily by shipping polyvinyl chloride to the USSR. 120/

was completed on a power grid to connect East Germany, Poland, and Czechoslovakia. This grid would exploit unused reserves inherent in the difference of 1.5 hours in peak consumption periods, 127/ which, according to one Polish estimate, might be equivalent to an erected capacity of 120 megawatts (mw). 128/ After the completion of this system, reportedly another would be established by 1965, linking the USSR, Hungary, Rumania, and Bulgaria. 129/ In March 1959 it was announced in Hungary that "very promising talks are in progress on the establishment of power transmission lines from the USSR" to be connected with inter-Satellite grids. 130/ The 11th Plenum of CEMA reached an agreement (details undisclosed) to link the Hungarian and Polish systems with the western USSR.

A significant bilateral agreement, announced in October 1958, provides for the construction of a high-output powerplant in Rumania (600-mw capacity), for which Czechoslovakia will deliver the power equipment on credit. In return, Rumania will deliver about 2 billion kilowatt-hours (kwh) annually to facilitate industrial development in Slovakia. This is similar to an arrangement in 1957 between Czechoslovakia and Poland. 131/ Czechoslovakia also is collaborating with Hungary, particularly in construction planning on a Danube hydroelectric project at Nagymaros, which presumably by 1964 will supply Czechoslovak and Hungarian industry with about 890 million kwh annually.* The project also will facilitate irrigation and improve shipping over a course of 80 kilometers. 133/

One of the most notable instances of multilateral collaboration is the planned construction by 1965 of the largest power combine in Poland, with a capacity of 1,200 mw. The combine is to be in the southwest corner of Poland in the area between Zittau, East Germany, and Frydlant, Czechoslovakia. 134/ This project will exploit the brown coal reserves of the Turow-Turoszow area, estimated at 1 billion tons. In April 1957, East Germany agreed to supply most of the machinery of a new mine in this area and for the expansion of the Turow I mine, and East Germany extended Poland a credit of 400 million rubles. Apart from a powerplant built in 1958 in Konin (300 mw) by Polish, East German, and Czechoslovak engineers, other powerplants will be built near Konin (1,100 mw) in Turoszow (1,200 mw), and near Turek (600 mw). Part of the coal will be delivered to the East German Hirschfelde powerplant, which will transmit power to Poland and Czechoslovakia. 135/ The coal also will be used by briquetting and chemical plants. In its report to the CEMA Plenum in December 1958 on

* CEMA earlier had recommended support for Hungary in the increase of power production to permit further development of the aluminum industry in both Hungary and Czechoslovakia. 132/

its bilateral agreements for 1961-65 entered into during 1958, the USSR stated, among other things, that it will aid this power project. 136/

The CEMA Committee for Coal Industry, under the chairmanship of the Polish Minister of Mines and with a headquarters staff in Warsaw, also is concerned with questions of technical development, output, and supply. For example, during an extended meeting in early 1958 in Moscow, this committee examined basic trends in the member countries in coal mining technology, mineshaft construction, open mining techniques, and enrichment of coal. The committee then agreed on recommendations to guide the countries in their long-term planning. 137/

In addition to such matters, the committee is said to have recommended allocations of coal supplies to the governments of the Soviet Bloc, which passed the figures to the various foreign trade ministries for use in bilateral trade negotiations. In a bilateral arrangement the recommended allocation is not necessarily consumed by the other trader but may be shipped by the latter to a third country. 138/

The committee has also examined questions of planned development, and recommendations have been passed, according to which the CEMA members reportedly obligated themselves to reach an indicated capacity by building specified new coal shafts or reconstructing old ones. 139/ It is clear, however, that the CEMA nations, especially Poland, have not been dictated to regarding the distribution of their coal and that they have not been penalized through the CEMA framework for nonfulfillment of their commitments. Polish cutbacks in coal shipments within the Soviet Bloc in late 1956 and 1957, however, resulted largely from short-term economic necessity. A recurrence of such action by Poland on that scale seems unlikely in view of the Polish planned output of 103 million tons by 1960 and 112 million to 113 million tons by 1965. 140/ Moreover, coal-marketing difficulties in the West may prove to be more than a short-term matter.

The indicated collaboration of East Germany, Poland, and Czechoslovakia in powerplant and coal development is reminiscent, on a small scale, of speculation several years ago regarding the possible evolution of trilateral regional integration, which, if carried far, could conceivably create a counterpoise to Soviet dominance in the Soviet Bloc. 141/ Although increasing cooperation may be expected in specific projects -- power, industrial raw materials, chemicals, machine building -- the creation of such an integrated regional unit is not likely. The heritage of nationalist rivalries remains an important factor. Moreover, although the USSR, especially since early 1958, has criticized the European Satellites for inadequate cooperation within the Bloc, Moscow probably would oppose extensive sectional integration, fearing

that it could reduce Soviet hegemony. Probably a primary motive underlying Moscow's build-up of CEMA in recent years is that CEMA can promote Bloc-wide integration while preventing the development of regional groupings.

APPENDIX A

RECOMMENDATIONS BY CEMA FOR SPECIALIZATION OF PRODUCTION OF MACHINERY IN THE EUROPEAN SATELLITES a/*

* Footnotes for Appendix A follow on p. 41.

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Heavy machinery b/						
Metallurgical equipment c/						
Sheet rolling equipment	X					
Blooming mills		X				
Wire drawing equipment	X					
Casting equipment	X					
Coke and metallurgical machines and equipment			X			
Power equipment						
Steam turbines						
50,000 to 100,000 kw	X	X				
Up to 50,000 kw (More than 100,000 kw only in USSR)	X	X	X	X		
Hydraulic turbines	X	X				
Boilers	X		X			
Electric motors						
Heavy		X				
Small	X					X
Stationary diesels	X	X				

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Heavy machinery b/ (continued)						
Mining equipment						
Coal cutters			X			
Dredging shovels, strippers, and the like	X					
Screening and sorting equipment		X	X			
Petroleum mining equipment			X		X	
Lifting equipment						
Cranes, winches, and the like	X	X		X		
Pumps and compressors	X	X			X	
Cement plants and equipment						
Large (100 to 2,000 tons daily)	X					
Medium (up to 800 tons daily)		X				
Small (400 to 450 tons daily)					X	
Ball mills			X			
Chemical equipment	X	X				

Type of Machinery	East Germany	Czechoslovakia	Poland	Hungary	Rumania	Bulgaria
Machine tools d/						
Metal-cutting types						
Horizontal boring machines						
Large (more than 8 inches)		X				
Small to medium (up to 8 inches)	X					
Vertical boring machines	X	X				
Gear grinding machines	X					
Thread grinding machines	X					
Metal-forming types						
Forge-press equipment	X	X				
Hydraulic presses (large)		X				
Forging machines (small and medium)	X		X			
Presses (small and medium)	X		X			
Locomotives and rolling stock						
Locomotives						
Electric (100 to 150 tons)		X				
Electric (up to 100 tons)	X					
Diesel (more than 2,000 horsepower)		X				
Diesel (less than 2,000 horsepower)	X	X		X	X	

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Locomotives and rolling stock (continued)						
Freight cars						X
Box			X		X	
Refrigerator	X					
Tank			X		X	
Self-unloading			X			
Specialized hopper					X	
Passenger cars						
Standard	X			X		
Dining	X					
Sleeping	X		X	X		
Self-propelled				X		
Ships						
Ocean vessels (up to 15,000 GRT e/)	X					
Ocean vessels (all sizes, up to 25,000 DWT f/)			X			
River and harbor craft		X		X		X
Construction and road-building equipment (heavy)	X	X				

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Construction and road-building equipment (heavy) (continued)						
Excavators						
Largest excavators such as crawler and bucket (USSR)						
Bucket chain						
2,340-liter capacity	X					
1,200-liter capacity		X				
Bucket wheel, 1,200 liters	X	X				
Rollers	X					
General machinery						
Leather and footwear machinery		X				
Textile machinery (general)	X	X	X			
Synthetic fiber machinery	X	X	X			
Sugar refining machinery	X	X	X			
Food processing machinery	X		X	X		
Printing and polygraphic machinery	X	X				

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Motor vehicles, tractors, and agricultural machinery						
Automobiles g/						
Up to 1,000-cc h/ piston displacement	X					
1,000 to 2,000-cc piston displacement		X				
More than 2,000-cc piston displacement			X			
Trucks g/						
Up to 4 tons	X					
4 to 7 tons		X		X	X	
7 to 9 tons (more than 9 tons, USSR)		X				
Dump			X	X	X	
Buses						
Small	X		X			
Large		X		X		
Tractors						
Light (25 and 40 horsepower)				X	X	
Medium-large	X	X	X			

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Motor vehicles, tractors, and agricultural machinery (continued)						
Agricultural machinery						
Grain combines (self-propelled)	X	X i/		X		
Grain combines (tractor-drawn)						X
Corn combines (self-propelled)	X		X	X		
Flax combines		X				
Potato harvesting combines	X		X			
Sugar beet harvesting combines	X	X				
Threshing machines	X	X	X			
Ensilage combines				X		
Appliance and automatic equipment						
Optical and optical mechanical equipment	X					
Medical instruments	X	X		X		
Computers	X	X				
Electrotechnical equipment						
Semiconductor devices	X					
Telecommunications equipment for export (intra-Bloc)	X	X		X		
Microwave equipment	X			X		
Radar	X		X			

Type of Machinery	East Germany	Czecho-slovakia	Poland	Hungary	Rumania	Bulgaria
Electrotechnical equipment (continued)						
Ferromagnetic texture sheet	X	X				
Glass fiber and other insulating material	X	X				
Mica paper			X	X		X
Transformers						
3-phase up to 200 kv	X					
Single-phase up 220 kv		X				
Mercury rectifiers	X	X	X			
Antifriction bearings j/						
General	X	X	X	X	X	
High-precision bearings	X	X				
Textile spindle bearings	X		X			
Cylindrical grinding bearings	X					

a. This unofficial, partial list is derived from scattered sources of all types and attempts to portray the over-all picture through 1958 (in a few instances the specialization is not scheduled to begin until 1960). The USSR is not included, because it produces virtually all items, relying little on the European Satellites. With some exceptions, these recommendations have been followed.

b. The machine building categories are arranged by number according to the sections of the CEMA Committee for Machine Building and their reported areas of responsibility.

c. At the 11th Plenum of CEMA in mid-May 1959 in Albania it reportedly was decided that "special steel rolling mills would be produced primarily in East Germany and Poland, /footnotes continued on p. 42/

ordinary steel rolling mills in the USSR and Czechoslovakia, and wiredrawing machines in Hungary and East Germany."

d. Including only selected types. Czechoslovakia is ahead of East Germany in unit production of machine tools, but East Germany produces a greater variety of models and is the largest Soviet Bloc exporter of important large items such as vertical and horizontal boring mills, gear grinding machines, jig borers, and large mechanical presses.

e. Gross register tons.

f. Deadweight tons.

g. Agreement ostensibly to enter into force in 1960.

h. Cubic centimeters.

i. To cease production in 1960.

j. Selected types. There is some specialization in sizes of antifriction bearings.