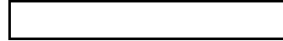


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25X1

ECONOMIC INTELLIGENCE REPORT

EIC-R-4

POTENTIAL ECONOMIC GAINS TO THE USSR  
RESULTING FROM  
THE ACQUISITION OF CONTINENTAL WESTERN  
EUROPE IN MID-1952  
(COMPLETED MARCH 1952)

May 1953

Prepared Jointly by  
U. S. Intelligence Agencies

MAY 27 1953  
ADIR 36

ECONOMIC INTELLIGENCE COMMITTEE

SECRET

DIA review(s) completed.

**W A R N I N G**

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25X1

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STATEMENT OF CONCURRENCE

On 10 April 1952, this project was concurred in by the EIC representatives of the Departments of the Army, Navy, Air Force, State, and by CIA as a contribution to NIE-40.

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S-E-C-R-E-TINTRODUCTION

In May 1951, the Board of National Estimates recommended to the IAC that the following estimate be prepared: NIE-40, "Potential Military, Economic, and Scientific Accretions to the USSR Resulting from the Acquisition of Western Europe before 1953." The original terms of reference drawn up by the IAC working group included military, political, economic, and scientific analyses. The economic contribution was levied on the Economic Intelligence Committee in June 1951.

It was hoped that this estimate would provide an answer to a question which arose frequently in estimates of Soviet capabilities and vulnerabilities: To what extent could the USSR effectively mobilize and possibly integrate the resources of Western Europe if the USSR overran this area. The EIC contribution was completed in April 1952; the ONE draft estimate was completed in October 1952.

During the months that elapsed since the initiation of the project, the international situation changed considerably and the assumptions underlying the proposed estimate no longer appeared directly applicable. Consequently, the Board of National Estimates recommended that the estimate be cancelled and that the economic contribution to the estimate be issued by the EIC. This report on the, "Potential Economic Gains to the USSR Resulting from the Acquisition of Continental Western Europe in Mid-1952," is being issued in response to the recommendation by the Board of National Estimates. Although the assumptions underlying the report were too restrictive for a national estimate, the report does contain data on Western Europe that are of significance for future studies on Soviet capabilities and vulnerabilities.

This report was approved by the EIC on 10 April 1952, as a coordinated contribution to NIE-40. The EIC representatives, however, did not agree in detail on all the statistical estimates in the report on Bloc production, capacity, inventory, and requirements presented. Some of these figures differ from those made by several of the agencies; others

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represent the only available estimate, but are not supported by convincing evidence. In the former case, the IAC representatives of the EIC have agreed that such differences as exist would not materially affect the conclusions of this report; in the latter case, they have agreed that the available evidence at least does not controvert the estimates presented. No attempt has been made to bring these estimates up-to-date and the status of the report has remained unchanged since it was approved by the EIC in April 1952.

A number of individual sector papers were prepared as contributions to this summary report. These sector papers are working drafts and are not being issued with the report. However, a limited number of copies are available for the following sectors and will be disseminated by the EIC Secretariat upon request. (Phone: )

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1. Aircraft
2. Chemicals
3. Electronic Equipment
4. Food
5. Machinery
6. Metals
7. Ordnance
8. Rubber
9. Shipbuilding
10. Textiles



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POTENTIAL ECONOMIC GAINS OF USSR RESULTING FROM THE  
ACQUISITION OF CONTINENTAL WESTERN EUROPE IN MID-1952

ASSUMPTIONS

1. Continental Western Europe is occupied by Soviet forces in mid-1952.
2. USSR has control of Middle East oil and overland access to all of continental Asia.
3. Effective Allied blockade prevents Soviet trade with other areas and severely curtails coastal shipping.
4. For the purpose of estimating Soviet military requirements, "wartime conditions" as stipulated in the outline of NIE-40 have been construed as follows: large-scale air and naval war; no major ground operations; USSR expects an Allied ground invasion in 1954.
5. Except for blockade, destructive effect of military action has been ignored.
6. No systematic stripping of Western European economy; optimum allocation of scarce fuels, materials, equipment, man, power, and scientific and technical personnel throughout Soviet controlled area.

S-E-C-R-E-TSUMMARY AND CONCLUSIONS

1. Under the assumptions of this study, acquisition of Continental Western Europe (CWE), with its industrial equipment substantially intact, would approximately double the economic potential of the present Soviet Bloc by 1954. It would more than double the crude steel, primary aluminum, lead, basic chemicals, and electric power production under Soviet control. It would increase its coal production by two-thirds and its primary copper production by one-third. It would more than double its machine tool inventory and production capacity. It would more than double its reservoir of skilled industrial manpower. The national income of CWE, which may be taken as a rough indicator of over-all economic strength was in 1950 generally equivalent to that of the Soviet Bloc. By 1954, the basic economic superiority of the Free World over the Soviet Bloc would be reduced from roughly 4:1 at present to about 3:2.

2. The additional economic resources contributed by CWE could, of course, not be converted immediately into additional military strength. Soviet efforts to press the Western European economy into the service of its machine would have to overcome considerable initial difficulties. Satellite governments would have to be organized and trained. Communists would be placed in key administrative positions. Administrative procedures would probably be slow and inefficient for the first year or two. Most of the administrative and technical personnel in government and industry would at first be permitted to stay in their jobs under the supervision of Soviet or native Communist advisers or observers. Such limited passive resistance as may exist among this and other groups would be met by arrests and deportations. Gradually, the remaining "bourgeois" elements would be replaced as reliable individuals can be trained to occupy lower administrative positions. By the end of the second year of occupation, Communist control would probably be established. The Communist puppet regimes, while encountering widespread hostility and evasion, could be expected to be more effective in enforcing economic controls than the

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collaborator governments of World War II, though less effective than the Nazi regime within Germany proper.

3. The Allied sea blockade would cut off a large proportion of Continental Western Europe's normal food and raw material supplies--about one-sixth of its grains and sugar, more than one-third of its fat supplies, nine-tenths of its petroleum supplies, nearly all of its rubber supplies, most of its non-ferrous metals supplies, two-thirds of its textile fiber supplies.

4. The resulting shortages could be made up in part by increased imports from the present Soviet Bloc (petroleum, grains, coal, certain metals, rubber), by increasing domestic production, by changing the pattern of utilization, by more intensive scrap utilization, through the development of substitutes, by drawing on stocks, or a combination of these measures. In most cases, moreover, consumption could be reduced to some extent without adverse effects on essential industrial production. But the necessary adjustments would be difficult and time consuming and some could not be completed within the first two years of occupation.

5. The major economic weaknesses of Soviet Eurasia during the first two years would be in the petroleum and food supplies. Copper and tin and East-West transport would also present problems.

6. In the first year of occupation, about 11 million tons of petroleum could be shipped from Eastern Europe to Western Europe without reducing civilian consumption in the Soviet Bloc by more than 20 percent below the FY 1952 level. In the second year, shipments could be stepped up to 14 million tons, with the increase coming out of increased Soviet Bloc production. The handling of this traffic would require careful planning of petroleum movements within the USSR to maximize the use of the available tank cars. Even with imports of this magnitude, petroleum consumption in CWE would decline to about one-third of normal--barely adequate for minimum requirements.

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7. Once the initial supplies from stocks and the 1952 harvest are exhausted, food consumption levels in CWE would decline sharply, both qualitatively and quantitatively. This would be the case even though CWE could produce more than enough food to support its population at present calorie levels; but the achievement of self-sufficiency would require a radical shift of agricultural production from livestock to crops for direct human consumption. During the first two years of occupation, Soviet controls would not be sufficiently effective to enforce such a drastic reallocation of agricultural resources. Although livestock production would undoubtedly be reduced substantially, the resulting savings of food energy would be sufficient only to offset the anticipated decline in total crop production, but not the loss of food imports. Consequently, in the second year of occupation, food consumption in Western Europe is likely to fall to average calorie levels comparable to those experienced in the occupied Western European countries during World War II, even if as much as  $6\frac{1}{2}$  million tons of grain, over and above the grain equivalent of foodstuffs requisitioned by the occupation forces, were shipped from Eastern Europe to Western Europe.

8. Among the metals, copper and tin would be the most critical. Supplies from primary and secondary production would decline to about one-half of normal in the combined area, but this would be enough to meet all essential requirements.

9. The East-West transportation requirements would double, but with the anticipated improvement in operating efficiency, the available capacity would be adequate for this increased traffic.

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10. As a result of the initial disorganization and readjustment, total industrial production in GWE would decline sharply in the first year of occupation, but efforts would be made from the start to maintain essential production in those industries which would be most useful to the Soviet military effort, notably coal, electric power, petroleum, metals, chemicals, machinery, electronic equipment. Armament production would remain on a small scale, roughly comparable to that contemplated under present NATO plans. The availability of large stocks of basic commodities in the USSR and some in Western Europe would provide a cushion which would help absorb the initial impact of the blockade during this transitional period.

11. In the second year of occupation, the Communist puppet regimes would be more firmly established and the most essential adjustments would have been made. Although petroleum, food, and certain other materials would be in short supply, these shortages would probably not prevent production in priority industries from regaining the levels prevailing prior to the occupation. Non-essential production--particularly production dependent on imported raw materials such as textiles, and production of durable consumer goods--would remain at low levels.

12. The main contribution of GWE to the Soviet military effort would be in broadening its economic base by supplying steel and other metals, machine tools and other machinery, optical and precision instruments, electronic equipment, and transportation equipment to the USSR. The excess petroleum refining and metal smelter and refining capacity that would exist in GWE under Soviet occupation would provide a substantial cushion against war damage. In the longer run, the unlimited ability of the Soviet Union to draw on Western Europe's technical skills, its patents, and its industrial know-how, would be even more important. GWE would be a substantial drain on the USSR in petroleum, but even in this case Western

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Europe's essential requirements, amounting to about one-third of normal, could be met without significant adverse effects on the economy of the USSR. In food, CWE would be a net gain to the USSR in the first year, but a net liability in the following years, though Soviet shipments of grain (and possibly some oil seeds) would be partly offset by Soviet requisitions of livestock products in Western Europe. There would also be some drain on Soviet supplies of certain non-ferrous metals and rubber.

13. In armament production, CWE possesses a large potential which in a few industry branches is greater than that of the present Soviet Bloc. In view of the large capacity for armament production in the USSR, relatively little of this Western European potential would be immediately mobilized in support of the Soviet war effort. Western Europe's most important short-run contribution in this field would be in supplying machine tools, specialized skills, and component parts. A particularly significant contribution would be made by Continental Western Europe's electronics industry, which would immediately increase Soviet capacity in this field almost fourfold, and up to sevenfold within a year if the Western European industry is put on a two-shift basis. The acquisition of this capacity would greatly improve the quality of Soviet weapons.

14. Soviet acquisition of CWE would add greatly to Soviet naval and merchant marine construction capabilities. The present limited scope of naval construction in CWE would, however, make the immediate gains to the Soviet small. A large proportion of the Western European ship yard capacity would probably be devoted to repairs, conversion of merchant ships, and the construction of small vessels. New construction started after mid-1952, including possible submarine construction, would not become a factor until after mid-1954. While few naval vessels would be captured, a considerable portion of CWE's large merchant marine would probably fall under Soviet control. Western Europe's contribution to the present Soviet

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production capacity in underwater weapons--mines, torpedoes and component parts--would also be substantial.

15. Although present capacity in CWE would permit aircraft production to be increased tenfold, from the present annual level of between 1,600 and 1,800 to about 17,500, actual output under occupation conditions is expected to be far below that figure. Because of the relatively small addition that the aircraft industry of CWE could make to the Soviet Bloc inventory and to the USSR's annual production, the Soviets would probably not attempt to mass produce aircraft in Western Europe. It is, however, likely that some specialized equipment and personnel would be transferred from Western Europe to the USSR, and that the remainder would be used for the repair and maintenance of the Soviet Air Force operating in Western Europe.

16. In ordnance, the USSR would acquire an estimated mid-1952 production capacity of some 8,700 armored vehicles per annum, equivalent to 14 percent of the capacity of the present Soviet Bloc. The USSR would also acquire some of the 15,500 armored vehicles now inventoried as in-being in CWE. In addition, the USSR would gain an estimated annual production capacity of about 10,000 pieces of heavy artillery, equivalent to about 9 percent of the capacity of the present Soviet Bloc. Some of the 20,500 artillery pieces now inventoried as in-being in CWE would also fall into Soviet hands. The estimated mid-1952 annual production capacity of 334,000 metric tons of explosives in CWE is equivalent to more than one-third of the capacity of Soviet Bloc countries. The annual rate of production of explosives, military and industrial, in CWE is estimated at about 200,000 metric tons by mid-1952, as compared with 390,000 metric tons in the Soviet Bloc. While the production capacity of armored vehicles and artillery in CWE is considerable and could be further expanded, it is doubtful that the

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Soviets would use it during their initial period of occupation for other than repair and maintenance purposes, as Soviet inventories and production capacities in these categories are believed to be adequate for foreseeable requirements. It may be expected, however, that Western European ordnance production capacity would be utilized more fully by the Soviets if production facilities in the USSR suffered severe damage by air attacks.

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 RESULTING FROM THE ACQUISITION OF  
 CONTINENTAL WESTERN EUROPE  
 IN MID-1952

I. Importance of Continental Western Europe in the  
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1. Under the assumptions of this study, acquisition of Continental Western Europe (CWE), with its industrial equipment substantially intact, would approximately double the economic potential of the present Soviet Bloc by 1954. It would more than double the crude steel, primary aluminum, lead, basic chemicals and electric power production under Soviet control. It would increase its coal production by two-thirds and its primary copper production by one-third. It would more than double its machine tool inventory and machinery production capacity. It would increase its electronic production capacity four to sevenfold. It would more than double its reservoir of skilled industrial manpower. The national income of CWE, which may be taken as a rough indicator of over-all economic strength, was in 1950 generally equivalent to that of the Soviet Bloc. (See Tables 1 and 2.)

2. By 1954 as a result of the acquisition of Continental Western Europe, the basic economic superiority of the Free World over the Soviet Bloc would be reduced from roughly 4:1 at present to about 3:2 (see Table 2). Not only would the Soviet Bloc gain direct control of CWE's economic resources, it would also gain access to strategic materials in the Middle East and Southeast Asia, though the quantities that could be moved from these areas would be limited as long as an effective sea blockade is maintained.

3. The extent to which this basic economic potential could be translated into military strength will depend on a number of factors, including (a) the initial degree of economic mobilization for war; (b) the speed with which economic resources can be converted to military purposes after the beginning of hostilities; (c) the problems encountered by the USSR in exploiting the economic potential of CWE; (d) the ultimate compressibility of civilian consumption.

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TABLE IINDICATORS OF THE ECONOMIC POTENTIAL OF  
CONTINENTAL WESTERN EUROPEAN COUNTRIES, 1960

Country	Population a/ Unit: (Millions)	National Income b/ (Million dollars)	National Income Per Capita b/ (Dollars)	Machine Tools (Thousands)	Coal Production c/ (Millions of m.t.)	Crude Steel Production (Millions of m.t.)	Electric Power Production (Billions of KWH)
Austria	7.1	1,610	227	n.a.	1.6	0.9	4.9
Belgium-Luxembourg	8.9	5,405	605	125	27.4	6.2	9.0
Denmark	4.3	3,049	714	20	0.2	neg.	1.7
Finland	4.0	1,458	365	n.a.	0.	.1	4.2
France	41.6	22,617	544	600	51.3	8.7	30.7
Italy (including Trieste)	46.5	11,609	249	300	1.3	2.3	24.9
Netherlands	10.1	5,360	531	n.a.	12.3	0.5	5.5
Norway	3.3	1,938	594	n.a.	0.4	0.1	17.3
Portugal	8.6	2,150 h/	250 h/	20	0.5	0.	0.9
Saar	.9	495 g/	550 g/	n.a.	15.1	1.9	0.7
Sweden	7.0	6,022	858	n.a.	0.3	1.4	18.3
Switzerland	4.7	3,964	847	n.a.	0.	neg.	9.1
Spain	28.35	4,759	168	n.a.	11.5	1.0	6.3
West Germany	47.4	16,968	358	n.a.	135.1	12.1	44.0
West Berlin	2.1	714 g/	337 g/	n.a.	0.	0.	0.4
Yugoslavia	16.3	2,442	150	20	5.1	0.4	2.4
Total	241.1	90,540	376	2,300	262.1	35.6	180.3

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Table 1 (Continued)

Country	Crude Petroleum Production (Millions of m.t.)	Primary Aluminum Production (Thousands of m.t.)	Number of Locomotives (Park) (Thousands)	Ton/Mns. Carried by Railroads d/ (Billions)	Number of Trucks (Park) (Thousands)	Seagoing Merchant Tonnage e/ (Millions of deadweight tons)
Austria	1.5 f/	18	2.1	5.2 E/	44	
Belgium-Luxembourg	0.	0	2.9	3.9 E/	152	0.6
Denmark	0.	0	0.8	1.1	59	1.7
Finland	0.	0	0.8	3.4	32	0.7
France	0.1	61	13.3	38.9	800	3.7
Italy (including Trieste)	0.	37	5.6	10.6 F/	222	3.5
Netherlands	0.7	0	1.0	3.0 E/	78	3.8
Norway	0.	46	0.6	1.3	49	7.8
Portugal	0.	0	0.5 h/	0.5 E/	22	0.5
Saar	0.	0	0.3	0.7 E/	9 E/	
Sweden	0.	4	1.8 h/	7.9 E/	89	2.8
Switzerland	0.	21	0.9	2.0	40	0.1
Spain	0.	2	2.8 h/	6.5 E/	79	1.3
West Germany	1.1	26	15.5	48.1	392	0.8
West Berlin	0.	0	0.	17 E/		
Yugoslavia	0.1	2	2.5	9.3	16	0.3
Total	3.5	219	51.4	144.4	2,100	27.6

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FOOTNOTES TO TABLE 1

- a/ Mid-1950
- b/ UN estimates projected to 1950 and converted to 1950 dollars. For method see UN Statistical Office, National and Per Capita Incomes, Seventy Countries, 1949, Statistical Papers Series E, #1, October 1950.
- c/ Hard coal and lignite in terms of hard coal equivalent.
- d/ State railroads.
- e/ Vessels over 1,000 gross tons, including freighters, refrigerated freighters, bulk carriers, tankers, and combination passenger and cargo vessels.
- f/ ~~All~~ Austrian oil production is controlled by the USSR.
- g/ OIR estimate.
- h/ 1949.

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Table 2

INDICATORS OF THE ECONOMIC POTENTIAL OF CONTINENTAL WESTERN EUROPE  
AND THE SOVIET BLOC, COMPARED WITH THE US AND OTHER FREE WORLD AREAS, 1950

Index	Unit	Continental Western Europe a/	USSR	European Satellites b/	SOVIET BLOC Communist China	Total	Eurasia
Population	millions	241	201	91	475	767	1,008
National income	billion dollars	91	62	24	15	101	192
National income per cap.	dollars	376	308	264	32	132	190
Machine tools inventory	thousands	2,300	1,000	800	neg.	1,800	4,100
<u>Production</u>							
Coal	millions of m.t.	262	263	92	35	390	652
Crude steel	" " "	36	26	7	neg.	33	69
Electric power	millions of KWH	180	86	40	4	130	310
Crude petroleum	millions of m.t.	3.5 e/	38	6.5 f/ g/	neg.	44.5	48
Primary aluminum	thousands of m.t.	219	172	13	0	185	404
<u>Transportation</u>							
Locomotive park	thousands	51	31	n.a.	n.a.	n.a.	
Ton-Km, carried by railroads	billions	144	510	80	30	620	764
Truck park	thousands	2,100	2,000	133	46	2,179	4,279
Seagoing merchant marine	deadweight tons	28	3 h/	neg.	neg.	3	31

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Table 2 (Continued)

	FREE WORLD OUTSIDE EURASIA				Total	Grand Total	PERCENT OF GRAND TOTAL		
	US	Canada	UK	Other Free World c/			CWE	Soviet Bloc	Free World (excl. CWE)
Population	152	14	51	555	772	1,780	14	43	43
National income	236	13	42	63	354	546	17	18	65
National income per cap.	1,552	935	831	113	459	307			
Machine tools inventory	1,900	185	850	800	3,735	7,835	29	23	48
<u>Production</u>									
Coal	499	15	220	94	828	1,480	18	26	56
Crude Steel	88	3	16	7	114	183	20	18	62
Electric power	388	51	55	92	586	896	20	15	65
Crude petroleum	266	4	neg.	108	378	426	neg.	11	89
Primary aluminum	652	360	30	25	1,067	1,471	15	13	72
<u>Transportation</u>									
Locomotive park	42	4	20	25	91				
Ton-km. carried by railroads	859	79	36	120	1,094	1,858	8	33	59
Truck park	8,271	545	879	2,032	11,727	16,006	13	14	73
Seagoing merchant marine	37	1	22	12	72	103	27	3	70

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FOOTNOTES TO TABLE 2

- a/ See Table 1.
- b/ Albania, Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland, Rumania.
- c/ Includes Ireland, Iceland, Africa, Latin America, Australia, New Zealand and Oceania, Japan, Indonesia, Philippines. Excludes non-Soviet Continental Asia.
- d/ Rough estimate.
- e/ Includes Austrian oil production, now under Soviet control.
- f/ Includes synthetic oil in terms of crude oil equivalent.
- g/ Excludes Austrian oil production, now under Soviet control.
- h/ 2,582,000 tons of which 785,000 tons were obtained through US lend-lease.

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In economic preparedness, the USSR has the edge over the rest of the world. Its economy has been continuously geared to war production since before World War II. Even now, after nearly two years of Western rearmament, the USSR devotes a much larger proportion of its national product to military purposes than the US or any other Western country. In CWE, on the other hand, military expenditures currently absorb a smaller proportion of the national product than in the US, and much less than in the USSR.

The speed of economic mobilization after war starts would probably be greater in the US and the UK than in either the USSR or CWE, particularly in view of the momentum already achieved by the US defense effort. The speed of mobilization in CWE would be slowed down because of the many basic adjustments which the Western European economy would have to undergo (see Part II below). The result would be a reduction of the initial advantage of the Soviet Bloc during the first two or three years of war.

In the long run, the obstacles to a full utilization of CWE in the service of the Soviet war economy could be gradually overcome, and the combined economic-military potential of the enlarged Soviet Bloc would approach the 2 to 3 ratio compared to the Free World which is suggested by the indicators of basic economic strength. The long run compressibility of civilian consumption may be assumed to be about the same in these two areas. During the last war, the major participants--the US, the UK, the USSR and Germany--all devoted about 40 to 50 percent of their national income to military purposes at the peak of the war effort. More far-reaching reductions in the standard of living can probably not be achieved--in the Western countries primarily because of the relatively high level of consumption considered as a "minimum"; in the Eastern countries because a further reduction would reduce consumption below the physical minimum of subsistence.

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II. Principal Factors Affecting the Exploitation of  
Continental Western Europe by the USSR.

A. Political and Administrative and Fiscal Factors

The shock of defeat and a second occupation of most of Western Europe within a period of only a few years would initially prevent any mass will to resist the Soviet invaders. Only a handful of people, and these mostly the wealthy, government officials, and members of the Armed Forces, would have an opportunity to reach the safety of an unoccupied area. For the great majority the overriding problem would be to make those adjustments to the regime which would permit them to survive, and to avoid imprisonment or deportation. They would as a consequence accept whatever changes in their employment the Soviets might choose to direct, though unwillingly and as a matter of necessity. Except for the Communists and their sympathizers, the tempo of work would be at the minimum consistent with personal safety. Productivity may be expected to decline.

Aside from the struggle to stay alive, the response of the Western Europeans to the Soviet occupation obviously would be determined to a considerable extent by what the Soviets do. In their over-all economic and political policy the latter have not been greatly moved so far by regard for the sensibilities of the people. Judging from their actions in Eastern Europe, it does not appear likely that they would follow, as the Germans did initially, a policy of ostensible non-interference in local affairs and respect for local customs, laws and regulations. Instead they are likely to proceed immediately and arbitrarily to institute whatever social, political and administrative changes they deem best suited to their objectives. For example, the Soviets might be expected to proceed at once with the transfer of all important industrial concerns, banks, etc., to Soviet, state, or "joint" Soviet-state ownership. However, certain other steps toward sovietization

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of the economic structure which might encounter greater resistance, such as farm collectivization or extensive expropriation of small businesses, would probably be postponed.

Where the initial occupation is accompanied by serious fighting, Soviet troops in their excesses in the first flush of victory would probably display even less regard for local sensibilities than would official Soviet policy, though this situation would probably be corrected rapidly as fear of contamination of the troops with Western ideas and the need to prepare for a counter-attack dictated the enforcement of severe discipline on the individual soldier.

Experience in the Satellite countries would also indicate that the Soviets might undertake large-scale and relatively unselective deportations. While the Soviet authorities might be somewhat restrained in their action by their concern for the prestige and popularity of local Communist parties, past actions suggest that other considerations would frequently be overriding.

Satellite governments would be organized in all occupied countries and trained Communists would be placed in key administrative positions. Only in France, Italy and West Germany is there a prospect that they would be available in sufficient numbers, however. For Western Germany the Soviets could draw on cadres from East Germany. Due to the existence of a full-fledged Communist administrative apparatus in East Germany, the setting up of a West German Communist regime would proceed somewhat more smoothly than in the rest of Europe. Even in these three major countries the Soviets would meet with widespread passive resistance.

Administrative procedures would probably be slow and inefficient for the first year or two at least, even though the Soviets would have an advantage over the Nazis in that they would have a considerably greater number of native supporters. Most of the administrative and

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technical personnel in government and industry would at first be permitted to stay in their jobs under the supervision of Soviet or native Communist advisers or observers. Such limited passive resistance as may exist among this group would be met by arrests and deportations. Gradually, the remaining "bourgeois" elements would be replaced as additional politically reliable individuals are trained to occupy lower administrative positions.

The methods of economic control would follow the pattern established in the present Soviet orbit. The occupied countries would be confronted with large Soviet demands for goods and services. To finance occupation costs and other public expenditures, the puppet governments would have to rely heavily on the expansion of currency and credit. Inflationary financing would also be used whenever it was desirable to stimulate industrial production and food collections by monetary incentives. At the same time the supply of food and other consumer goods would shrink as imports from overseas are cut off. Seizure of stocks and "enemy property" by the occupation power, and looting and black market operations by individuals in the Soviet armed forces, would further reduce supplies. The general lack of confidence in the future of the currency would stimulate the hoarding of goods, and this would intensify the inflation.

Some effort would undoubtedly be made by the puppet governments to reduce demand by increased taxation, with the emphasis on indirect taxes, but tax revenues would not be sufficient to offset the inflationary effects of the factors mentioned above. The main reliance of the new regimes would be in suppressing the consequences of inflation by a comprehensive system of price, wage, allocation, and rationing controls. Evasion of controls would be widespread, particularly in countries like France and Italy, which lack a tradition of effective enforcement of, and compliance with, economic regulations.

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When the rapidly mounting inflationary pressures reach the proportions of a hyper-inflation, the new regimes may be expected to wipe out the accumulated excess purchasing power by means of monetary reforms. In the course of the monetary reforms, the internal government debt would be repudiated or reduced to a fraction. Together with selective taxation and other discriminatory devices, monetary reform would also be used to reduce the scope of private enterprise, and as a means of transferring funds to the occupation authorities and to the state.

Control of industrial production would be accomplished by centralized planning and by direct Soviet or State Control over all important industrial concerns. This would be supplemented by strict Central Bank control of all credits and investments.

In contrast with the "cooperator" governments of World War II, the Communist puppet regimes might be expected to make systematic efforts from the start to enforce controls on farm production. Special state or "cooperative" Trading companies might be created, which would set up food purchasing agencies in the rural areas with special stores selling consumers' goods and agricultural implements and supplies to farmers in exchange for food deliveries in excess of a fixed basic quota.

If persuasion and incentives failed to achieve their purpose, the Communist regimes might well resort to large-scale removals of livestock and the detailed policing of farms to enforce compliance with production and delivery schedules. On the other hand, greater coercion would also breed more resistance than in World War II. While during the Axis regime, farmers were not in all areas hostile to the dominant power or to their own subservient governments, under the assumed conditions they would be without major exceptions. In spite of strict controls, the farmers would undoubtedly contrive, as they did

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in World War II, to obtain ample supplies for themselves, as well as a surplus for disposal in profitable black markets. During the first two years, while administration, transport, and distribution are disorganized, evasion and non-compliance would be very widespread. In subsequent years, Communist control over food production and deliveries would probably be tightened with the result that an increased proportion of the declining agricultural output would be available for controlled distribution. In the cities, preferential rations would be granted to essential workers in industry and government. The rationing system would thus be used deliberately to induce increased output and cooperation with the regime.

The net effect of these political, administrative, and fiscal factors on economic activity is difficult to predict. On the whole, it is likely that after the initial period of disorganization, the Communist puppet regimes would be more effective in enforcing economic controls than the collaborator governments of World War II, though less effective than the Nazi regime within Germany proper. Organized resistance should not be expected until the prospects of liberation appear favorable. This would be particularly true if the Soviets initially pursued a "correct" occupation policy as did the Germans. Should the Soviets adopt a ruthless deportation policy, sporadic resistance could be expected. Short of this, and until liberation was at hand, the principal obstacle to Soviet exploitation of Continental Western Europe would be largely of a passive nature—slowing tempo of work, administrative inefficiency, violation of economic controls, etc. During this period, the organization for resistance would be underway; but not until the stage of organized resistance is reached would the European peoples be in a position to deny to the Soviets a significant part of their potential economic gains from Western Europe.

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S-E-C-R-E-TB. Economic Factors

In addition to these political and administrative problems, the USSR would encounter a number of economic problems in the exploitation of Continental Western Europe. The most serious of these problems would be presented by the petroleum and food supply. However, except for the initial period of disorganization and readjustment--of one or two years-- these factors would probably not prevent the full operation of those industries in CWE which can make significant direct or indirect contributions to the Soviet military potential.

It may be assumed that the Allied sea blockade would be sufficiently effective from the start to prevent all but a trickle of overseas shipments from reaching the Soviet-controlled area. A large proportion of Western Europe's normal food and raw material supplies would thus be cut off--about one-sixth of its grains and sugar, more than one-third of its fat supplies, nine-tenths of its petroleum supplies, nearly all of its rubber supplies, most of its non-ferrous metals supplies, two-thirds of its textile fiber supplies.

The resulting shortages could be made up in part by increased imports from the present Soviet Bloc, by increasing domestic production, by changing the pattern of utilization, by more intensive scrap utilization, through the development of substitutes, by drawing on stocks, or a combination of these measures. In most cases, moreover, consumption could be reduced to some extent without adverse effects on essential industrial production. But the necessary adjustments would be difficult and time-consuming, and some could not be completed until after the second year of occupation. Oil burning facilities would have to be converted (or reconverted) to coal. A large portion of the trucks would be equipped with wood or coal gas generators. Much traffic would have to be rerouted, and existing channels of trade would have to be reorganized.

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Similar adjustments would be made in agriculture. Grain extraction rates would be increased, and livestock production would be reduced in favor of production of crops for direct human consumption. In spite of these adjustments, both the quantity and the quality of the diet would deteriorate sharply, and in the second year of occupation, food consumption would fall to levels roughly comparable to those in World War II. As a result of the food shortage, the lack of economic incentives and other factors, productivity may be expected to decline.

Efforts would, however, be made to assure adequate rations to essential workers in industry and government. In accordance with the usual Soviet pattern, the rationing system would discriminate strongly in favor of managers, technical personnel, and industrial workers. It may be expected, however, that workers could not be completely isolated from the food shortage. It is also likely that conditions of actual starvation would occur in certain food deficit areas which the Soviets might consider as of secondary importance.

Total industrial production would undoubtedly decline sharply in the first year of occupation, but the Soviets would try from the start to maintain essential production in the basic industries (coal, electric power, petroleum, chemicals), and in those manufacturing industries which would be most useful to their military effort (notably machinery and electronic equipment). Armament production would remain on a small scale, roughly comparable to that contemplated under present NATO plans. The existing stocks of basic commodities in the USSR as well as in CMB would provide a cushion which would help absorb the initial impact of the blockade during this transitional period.

During the second year of occupation, the Communist puppet regimes would be more firmly established, the most essential adjustments would

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have been made, and production in priority industries would probably regain the pre-occupation level. Non-essential production--particularly production dependent on imported raw materials such as textiles and leather, and production of durable consumer goods--would remain low.

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S-E-C-R-E-TIII. Critical SectorsA. Petroleum1. Estimated Supplies.

Of all the weaknesses in the economic armor of Soviet Eurasia, the most serious would be the petroleum supply. This would be the case even if the USSR had military control of the Middle East, provided that oil transport from the wells is effectively interdicted, as is assumed in this study.

While the present Soviet Bloc produces enough petroleum to cover its requirements for peace and war, this is not true of Continental Western Europe. Crude petroleum production in CWE currently does not exceed about 3.5 million metric tons, plus 1.5 million tons under Soviet control in Austria. Even if Austrian production is included, Continental Western European crude petroleum production would yield only about 4.5 million metric tons of petroleum products, equivalent to 11 percent of its current requirements for inland consumption (see Table 3). Western European stocks, if captured intact, would add 7.5 million tons, so that total supplies in CWE would amount to 12 million tons. It is assumed that 5.2 million tons would be requisitioned by the occupation forces, leaving 6.8 million tons available for civilian consumption. This is only 17 percent of the supplies available for inland consumption in FY 1952.

Efforts would undoubtedly be made to supplement this supply by shipments from the USSR and the Satellite countries in order to assure a minimum level of consumption necessary for the maintenance of the basic economy in CWE. It is estimated that about 7.4 million tons would probably be shipped from the USSR. This amount could be spared by the Soviet Union without significant adverse effects on industrial production, and without withdrawals from stocks. Shipments of this

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Table 3

ESTIMATED PETROLEUM SUPPLIES IN CONTINENTAL WESTERN EUROPE, a/  
FY 1952, 1953, AND 1954(In millions of metric tons,  
in terms of petroleum products)

	FY 1952	FY 1953	FY 1954
Production from indigenous crude	4.5	4.5	5.0
+ Imports	35.3 <u>b/</u>	10.8 <u>c/</u>	13.8 <u>c/</u>
- Requisitions by Soviets		5.2 <u>c/</u>	5.2 <u>c/</u>
Current supplies av. for civilian consumption		10.1	13.6
+ Withdrawals from stocks		3.8	0
Total available for civilian consumption	39.8 <u>d/</u>	13.9	13.6

a/ Including Austria.b/ Difference between inland consumption and indigenous production, in terms of petroleum products.c/ See Annex 1 d/ Estimated inland consumption. Excludes bunkers. Includes military consumption.

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magnitude would leave the USSR with civilian supplies approximately equal to the 1950 level and 18 percent below the estimated civilian consumption in FY 1952. 1/ Another 3.4 million tons of petroleum products could be made available to CWE from the Satellite area (primarily Rumania). This would leave 2.6 million tons available for civilian consumption in this area 2/.

With imports totalling 10.8 million tons, petroleum supplies in CWE would amount to 22.8 million tons, assuming that all stocks were captured intact, and that all stocks would be consumed in the first year. After deducting Soviet military requirements in CWE, 17.6 million tons, or 44 percent of current inland consumption, would be available for civilian use.

It may be expected, however, that only a part of Western Europe's stocks would be made available for consumption in the first year of occupation. If it is assumed that one-half of these stocks would be released for consumption, civilian petroleum availabilities during the first year would be about 14 million tons, or 35 percent of inland consumption in FY 1952. 3/

No further deterioration in the petroleum supply would occur in the second year of occupation under the assumptions of this study. In that year, Western European crude oil production could be increased slightly, as a result of the anticipated further expansion of Western German and Austrian output. More importantly, increased

1/ This estimate assumes no imports of crude oil or petroleum products into the USSR except 300,000 tons that might be obtained from Iran via rail.

2/ See Annex 1  for basis of these estimates.

3/ It should be noted that FY 1952 inland consumption includes some military consumption.

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More importantly, increased production in the Soviet Bloc would permit additional shipments of about 3 million tons to CWE, provided civilian consumption in the Soviet Bloc were held at the same level as in FY 1953. <sup>1/</sup> This, in turn, would make it possible to maintain civilian consumption in CWE at approximately the same level as in FY 1953, without any further withdrawals from stocks. At the same time, further progress would be made in converting oil-burning equipment to other fuels. In the third year of occupation, perhaps an additional 2 million tons of liquid fuels would become available from reactivated synthetic gasoline plants in Germany. In that year, it may also be possible to further increase imports from Eastern Europe.

2. Impact on the Economy.

The initial impact of a two-thirds reduction in civilian petroleum supplies, from 40 million tons in FY 1952 to 14 million tons in FY 1953, on the economy of CWE would be severe; but with drastic rationing, supplies would probably be adequate to maintain essential economic activity at the level set by other limiting factors. As mentioned under II-B, industrial production is expected to fall sharply in any event during the first year of occupation as a result of the general disorganization and readjustment. In the second year, the most necessary adjustments would have been made, and from there on the petroleum shortage would probably not prevent essential industrial output in CWE from regaining the pre-occupation level.

The Soviets are undoubtedly fully aware that the petroleum supply is a critical factor which might limit their ability to exploit the economic potential of CWE. It is reasonable to assume, therefore, that no measure would be neglected that could serve to stretch the available supply. Private passenger car traffic and civil aviation would be

<sup>1/</sup> See Annex I

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brought to a virtual standstill. The resulting savings would, however, be relatively small, as these categories accounted for only about 8 percent of total petroleum consumption in FY 1951 (see Table 4). But, in addition, truck traffic could be curtailed much more sharply than, for example, in the US, since practically all important industrial plants in CWE are served by railroad sidings. Wherever practicable, moreover, trucks would be equipped with wood or coal gas generating equipment. Finally, most of the European fuel oil-burning facilities can be converted to coal, and steps would undoubtedly be taken at once to supply industrial consumers and households with the necessary equipment.

The estimated consumption pattern for FY 1953, by products, is shown in Table 5. It projects a reduction of motor gasoline and residual oil consumption to about one-fourth of the FY 1952 level. Kerosene and distillates would be reduced to about two-thirds, and lubricants to about 40 percent.

These cuts in Western European civilian petroleum consumption, while severe, would be less drastic than those sustained by Germany in World War II. Before the war, Greater Germany consumed about 7 million tons of petroleum products. In 1940, civilian consumption was reduced by more than half. By 1942, civilian supplies dropped to between one-third and one-fourth of prewar. More significantly, the percentage reductions in civilian supplies of motor gasoline and diesel oil were much more drastic than those anticipated for CWE under the assumptions of NIE-40. Civilian consumption of motor gasoline, which ran at a monthly average of slightly more than 200,000 metric tons just before the outbreak of World War II, was reduced to one-third in 1940, and dropped to about 12 percent of prewar in 1943. Civilian consumption of diesel oil dropped from about 130,000 tons monthly before the war to two-thirds of this amount in 1940, and slightly more than one-third

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Table 4

CONSUMPTION OF PETROLEUM PRODUCTS  
 IN SEVEN CONTINENTAL WESTERN EUROPEAN  
 COUNTRIES, <sup>a/</sup> BY MAJOR CONSUMER CATEGORIES, FY 1951

(In millions of metric tons)

Consumer Category	Consumption	Percentage of Total
Highway transport		
Commercial	6.6	23
Private	2.0	7
Railways	1.7	6
Inland water transport	2.0	7
Aviation	0.3	1
Total transport	12.6	44
Industry	10.9	39
Agriculture	1.9	7
Light and heat	2.6	9
Unspecified	0.3	1
Total	28.3	100

<sup>a/</sup> Belgium-Luxembourg, Denmark, France, Italy, Netherlands, Norway, Sweden.

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Table 5

ESTIMATED CONSUMPTION OF SPECIFIED PETROLEUM PRODUCTS  
IN CONTINENTAL WESTERN EUROPE, FY 1952 AND FY 1953

(In millions of metric tons)

Product	Inland Consumption, FY 1952 <sup>a/</sup>	Civilian Consumption FY 1953	FY 1953 as Percentage of FY 1952
Aviation gasoline	0.5	0	0
Motor gasoline	10.9	2.5	23
Jet fuel	0.2	0	0
Kerosene	1.4	0.9	64
Distillates	8.6	5.3	62
Residuals	14.9	3.8	25
Lubricants	3.3	1.4	42
Total inland consumption	39.8	13.9	35

<sup>a/</sup> Excludes bunkers. Includes military consumption.S-E-C-R-E-T

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in 1943. 1/ These drastic cuts were made without any serious effect on Germany's essential civilian and military production. To be sure, Western Europe has since become more dependent on liquid fuels; but it cannot be expected that a reduction from 40 million tons to 14 million tons would have a more serious effect on industrial production than a reduction from 7 million tons to about 2 million tons in Greater Germany during World War II.

3. Petroleum Transport.

No special problem would be raised by the need to transport large quantities of petroleum products from Eastern Europe to Western Europe, most of this by rail. Standard gauge tank cars for movements westward from transloading points in Eastern Europe would be available in sufficient numbers, as tank cars now engaged in traffic from the ports would be released for East-West movements, and total petroleum consumption in CWE (including military consumption) would be reduced to less than half of normal. The serviceable inventory of tank cars in the USSR could transport to the Western border more than twice the amount of petroleum products than the tonnage which is likely to be available for export. 2/ The shipment of 7.4 and 9.9 million tons to CWE in FY 1952 and FY 1953, respectively, 3/ could be made entirely by rail, but since at least 2 million tons could be shipped from Baku via pipeline to Batumi, and from there via Black Sea tanker to Rumania and thence to Western Europe, the remainder could be shipped by rail without any strain on Soviet tank car facilities.

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1/ See US Strategic Bombing Survey, The German Oil Industry. See also USSBS, The effects of Strategic Bombing on the German War Economy, 1945, pp. 77-78.

2/ See Annex 2.

3/ See Annex 1.

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S-E-C-R-E-TB. Food

Continental Western Europe is normally dependent on imports for about 20 percent of its food requirements. In FY 1952, the equivalent of 500 calories per capita per day, out of a total average consumption of 2,750 calories, will be imported from other areas. 1/ These imports are equivalent in food energy to 15 million tons of grain. 2/ However, some of these imports take the form of livestock feed, and this increases the tonnages that are required. In recent years, CWE imported some 7.5 million tons of breadgrains, 5.5 million tons of coarse grains, and some 4 million tons of oil seeds and other fats and oil products equivalent to about 1.5 million tons of pure fat. Practically all of these imports came from overseas areas. Next to the petroleum supply, the loss of these food imports would raise the most serious problem in the Soviet exploitation of CWE.

This is the case even though CWE could produce more than enough food to support its population at the present average caloric level of 2,750 calories per capita per day. Continental Western Europe's production of original food energy from the soil--including grass and other fodder crops--is equivalent to between 7,000 and 8,000 calories per person per day. But most of this output is fed to livestock, with a consequent loss of some 80 percent of the original food energy in the conversion to livestock products. In addition, part of the original output is needed for seed and industrial purposes. Only about 2,250 calories per capita per day remain available for human consumption.

It would obviously be impossible to convert all pasture land and other fodder crop acreage to the growing of food crops. But, the 500-calorie deficit could be made up from domestic production by means of a

1/ Net imports. See Annex 3.

2/ At the normal (80 percent) extraction rate.

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radical shift of agricultural resources from livestock feeding to direct human consumption. To some extent, such a shift always occurs in wartime. Flour extraction rates are increased in order to make a larger proportion of the grain milled available for bread making; this leaves, of course, a smaller quantity of milling offals available for livestock feeding. Other measures can be taken, including the requisitioning of grains and potatoes originally intended for livestock feeding, and the expansion of the acreage devoted to crops for human consumption at the expense of the acreage devoted to feed crops and pasture. But past experience has shown that the drastic reduction in livestock numbers which such a policy implies will encounter extreme resistance on the part of farmers and consumers alike. People dislike changing to a simpler diet and will go to great lengths in evading government regulations to obtain foodstuffs to which they have become accustomed. People living in rural districts, and in food surplus areas in general, will be more or less successful in this. A country like Denmark, for instance, successfully resisted Nazi pressures to reduce its dietary standard to that of the rest of Europe. Consumer demand for livestock products will bid up prices in the black market, thus providing a special incentive for farmers to produce such products. Because of their high value per pound, livestock products are in any event more suitable for illegal trading than bulky foodstuffs such as grain and potatoes. Besides high black market profits, there are other reasons which lead the farmer to resist pressures to reduce his livestock. To him livestock is an essential element in his farming operations. To him it represents real capital, which he will try to preserve as a hedge against inflation. These factors, together with the dispersion of agricultural production among millions of farms, make it extremely difficult to enforce a drastic reduction of livestock numbers.

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The experience of Axis Europe in World War II may serve to illustrate this problem. During the war, food imports into Axis Europe were sharply reduced. In addition, agricultural production declined as a result of shortages of fertilizer, manpower, and draft power. Livestock herds were reduced and agricultural resources were diverted from livestock feeding to direct human consumption. But the reduction in livestock numbers which actually occurred, and the concomitant savings of food energy were far from adequate to prevent under-nourishment and some starvation in large areas of Western Europe occupied by the Nazis. In food deficit areas, consumption levels of non-priority consumers declined to less than 2,000 calories per head over prolonged periods of time, and in some instances to less than 1,500 calories. At the same time, large quantities of bread grain, potatoes, sugar beets, etc., were fed to livestock.

There is, of course, a possibility that the Communist regimes might be more successful than the Axis governments in enforcing the necessary adjustments. For reasons explained under II-A, however, government controls over food production and distribution are unlikely to be more effective than those prevailing in Axis Europe during World War II, at least during the first two years. As a result, the food situation in CWE is expected to deteriorate sharply in the second year of occupation, after the initial supplies from stocks and the 1952 harvest are exhausted.

In the first year of occupation, it is estimated that total food supplies available from indigenous production and stocks on hand would supply an average of about 2,550 calories per capita per day, or 300 calories more than in the consumption year 1951-52, if none of these supplies were requisitioned for shipment to Eastern Europe or for use by the occupation forces. 1/ Higher flour extraction rates would be

1/ See Annex 3.

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the principal factor in increasing the caloric value of indigenous food availabilities.

Soviet requisitions of foodstuffs must, of course, be anticipated. The emergency slaughter of livestock, made necessary by reduced fodder supplies, would make considerable quantities of meat available temporarily, and a large part of this windfall would undoubtedly be seized by the occupying power. Exports of sugar, cheese and eggs from surplus countries would be largely diverted from present markets to the USSR or to the occupation forces. Altogether, Soviet requisitions during the first year of occupation are estimated at about 850,000 metric tons of sugar, 500,000 tons of meat, 180,000 tons of cheese, and 150,000 tons of eggs. These requisitions might be slightly more than offset in terms of calories--though not, of course, in quality of value--by the shipment of about 2-1/2 million tons of breadgrains from the USSR to CWE. Average supplies available for consumption in CWE would thus be of the order of 2,600 calories per capita per day.

It may be assumed that the farm population (which constitutes about one-third of the total population) would retain, legally or otherwise, enough food to supply around 3,200 calories daily for each member of the family. It is doubtful that during the period involved, the Soviets could establish an administrative organization which would be capable of enforcing a more stringent delivery program if they desired to do so.

Approximately 27 percent of the total population (40 percent of the non-farm population) would be engaged in industrial or other work regarded by the Soviets as essential and would receive a daily average of 3,000 calories. 1/ This is a broad category including heavy workers (i.e., miners) receiving 4,000 or more calories daily, down to and including light workers consuming considerably less than 3,000 and also including administrative and police officials on relatively good

1/ All calorie figures include non-rationed and black market supplies.

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rations. This would leave average food supplies equivalent to only 1,800 calories daily available for consumers in the non-priority categories.

In the second year of occupation, the food deficit in Western Europe would be considerably greater than during the first year. Stocks would be down to minimum levels. The total output of original food energy from the soil would decline, but this decline would be partly offset by a further increase in the proportion of the total output which is used for direct human consumption. As during World War II, the pattern of consumption would shift toward a diet with a larger share of vegetable foods and a smaller share of livestock products. Acreages of high yielding food crops would be expended, and consumption of grains and potatoes for food would be increased at the expense of feed. These measures would result in a food output equivalent to about 2,250 calories per person per day, about the same as in 1951-52. <sup>1/</sup>

On the basis of the assumed average daily consumption of 3,200 calories by the farm population, and 3,000 calories by other priority categories, it is estimated that the average daily food supply available from indigenous production to the non-priority segment of the population would be about 1,000 calories (prior to requisitioning of surpluses). Imports amounting to 6.5 million tons of grain equivalent from Eastern Europe would be necessary to raise the average daily consumption of non-priority consumers to 1,650 calories. Most of the imports would undoubtedly be in the form of bread grain. In addition, there might be some imports of vegetable fats from Eastern Europe or Manchuria, but the calories they would contribute to the Western European diet would probably be more than offset by Soviet requisitions estimated at 150,000 metric tons of sugar, 300,000 tons of meat, 100,000 tons of cheese, and 50,000 tons of eggs.

<sup>1/</sup> See Annex 3.

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Even with imports of 6.5 million tons of breadgrains, the food situation in CWE would be serious. Non-priority consumers would be at calorie levels comparable to those experienced in the occupied Western European countries during World War II. The shortage of fats would be particularly acute. While it is impossible to predict the exact extent and incidence of the food shortage, it is likely that non-priority consumers in those food deficit areas which the Soviets might consider as of secondary importance would fare worst.

Under normal growing conditions, sufficient grain would be available from harvests and reserve stocks in the Soviet Bloc to supply CWE's minimum requirements during the first two years. Transportation facilities would be adequate to handle these quantities 1/. However, it is by no means certain that the Kremlin would decide on shipments of this magnitude. In any case, shipments on this scale could probably not be continued for more than two years. It is likely, therefore, that the Soviets would permit consumption levels of non-priority consumers in CWE to decline sharply as this would serve to increase the pressure for a further tightening of controls and further drastic reductions in livestock production in the following crop year.

C. Copper and Tin

Shortages of critical metals are not expected to seriously affect production for essential purposes in either the Soviet Bloc or in Continental Western Europe, but certain non-ferrous metals, notably copper and tin, would have to be rationed severely. Production of cobalt and molybdenum would also fall considerably short of normal requirements, but good substitutes for some uses--vanadium and tungsten, respectively--would be available to meet essential requirements.

1. Copper,

In 1951, CWE was dependent on imports for about 85 percent of its apparent consumption of new copper amounting to 663,000 metric tons.

1/ See Section D, below.

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Copper was also short in the Soviet Bloc, although imports amounted to only about 10 percent of apparent consumption, totalling 300,000 tons.

Under wartime conditions, Western European mine production of copper could probably be stepped up to a maximum of about 115,000 metric tons. If CWE were completely dependent on indigenous primary production, consumption would therefore have to be cut to less than one-fifth of the 1951 level. However, a substantial proportion of total copper consumption is derived from scrap. The exact proportion for CWE is not known but if it is assumed that CWE derives a similar proportion of its total consumption from old scrap as the US and the UK (about one-third), total consumption of primary and secondary copper would have to be cut by only one-half. Also, in an emergency, scrap collections could probably be stepped up, at least temporarily. Moreover, aluminum would be available for substitution in some uses. US experience suggests that essential civilian requirements for copper amount to about one-fourth of peacetime demands; but the Soviets could be expected to reduce this ratio further. Under these conditions a munitions program approaching present NATO goals could be accomplished in CWE. 1/

Soviet Bloc production of primary copper is expected to increase from 272,000 metric tons in 1951 to about 325,000 tons in mid-1954. All of this would probably be required for essential military and civilian purposes within the Bloc.

2. Tin.

In 1951, Western Europe was dependent on imports for more than 90 percent of its apparent consumption of primary tin, amounting to 25,000 metric tons. The Soviet Bloc was also short of tin, domestic mine production covering only about 75 percent of its estimated consumption of 20,000 tons. Although production of tin could be increased to about

1/ It is interesting to note that total copper consumption in Greater Germany declined from 448,000 tons in 1938 to 221,000 tons in 1943 (i.e., about half) without any serious effect on munitions output. Primary copper contributed only 90,000 tons in 1943.

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24,000 tons by mid-1954 for the combined area, this would still represent only 57 percent of apparent consumption in 1951.

Products containing tin are vitally important and widely used in an industrial economy, and no country could support large-scale industrial production without consuming substantial quantities, particularly for solders and bearing materials. In a war economy, the amount of tin in these essential uses can be decreased somewhat, but for most uses substitutes have not been developed. In Western Europe, large quantities of tin are ordinarily consumed in making tin plate, which is used primarily for food preservation. Although civilian use of tin plate could be almost completely cut off, limited quantities would be necessary to provide containers for army rations.

Under wartime conditions, Western European tin supplies could be increased by a vigorous scrap collection program. The Soviets could also draw on stocks, estimated at 9,000 tons in the USSR, and 3,500 tons in CWE. Even so, the Soviets would still be nearly as hard pressed for tin as were the Germans during World War II, 1/ unless substantial quantities could be brought in from Malaya.

1/ Tin consumption in Greater Germany declined by more than half during World War II, from 20,400 metric tons in 1938 to 9,500 tons in 1943.

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S-E-C-R-E-TIV. NON-CRITICAL SECTORS<sup>1/</sup>A. East-West Transportation

In the event of Soviet occupation of Continental Western Europe, west bound traffic demands on East-West transportation lines would approximately double. In view of the dismantling of the second track in Eastern Germany, the weakest link in East-West transportation is now in an area which forms a band extending from the Baltic west of Stettin through East Germany, the Czech-German border area, and Western Austria to the Adriatic Sea. This area is crossed in an East-West direction by four double track and eight single track lines. The only inland waterways in this area are the low-capacity canal system east of Berlin and the Danube. This inland transport capacity can be supplemented by waterborne traffic through the Baltic Sea to Baltic ports between Stralsund and Flensburg (and from there to the Elbe and the West German transport system); but this traffic is limited by the relatively small capacity of the West Baltic ports. Despite these problems, East-West transport would probably not seriously affect Soviet exploitation of CWF under the assumptions of this study. Under the same assumptions, transloading facilities between the broad gauge network of the USSR and the standard gauge network are not expected to impose any obstacles to the flow of essential East-West traffic.

1. Traffic Requirements.

East-to-West freight traffic requirements would increase from an estimated 35 million metric tons per annum at present to about 68 million tons in the first year, and 75 million tons in the second year (see Table 6). These traffic requirements are calculated in such a way as to minimize the traffic burden on East-West routes. It is assumed, for instance, that the estimated Polish coal surplus of 20 million tons <sup>2/</sup> available

<sup>1/</sup> The sectors listed in this chapter are considered non-critical either because capacity or supplies are likely to be adequate, or because the anticipated shortages would not significantly affect essential industrial production.

<sup>2/</sup> See IV-B below.

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Table 6

## ESTIMATED EAST-TO-WEST FREIGHT TRAFFIC REQUIREMENTS, FY 1953 AND 1954

(In millions of metric tons)

	FY 1953	FY 1954
Petroleum products <u>1/</u>	10.8	13.8
Grains <u>2/</u>	2.5	6.5
Swedish iron ore <u>3/</u>	6	6
Manganese and chrome	1	1
Timber	1	1
Coal <u>4/</u>	2	2
Miscellaneous	2	2
Military traffic other than POL	8	8
Total through traffic	33.3	40.3
Local traffic	35	35
Total traffic	68.3	75.3

1/ See III - A.2/ See III - E.3/ See IV - D.4/ See IV - B.

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entirely over North-South routes to the three Scandinavian countries and Finland (12 million tons), and Austria and Yugoslavia (6 million tons). This would leave only 2 million tons to be shipped over East-West routes. These would probably be shipped to Italy, and would compete with East-West traffic in the Austro-Italian border area. Other coal requirements of Western European coal-deficit countries would be met by shipments from the Ruhr or the Saar. About 9 million tons of Swedish iron ore--the maximum it is believed could be shipped by way of the Baltic 1/--would require transshipment in German Baltic ports; but only 6 million tons of this, destined for CWE, would compete with other East-West traffic; the remainder would go to Poland and Czechoslovakia over North-South routes. 2/

1/ Because of limited transport and loading facilities in Sweden.

2/ In 1951, about 7.5 million metric tons of Swedish iron ore went to CWE; about 2.5 million tons went to Poland and Czechoslovakia.

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S-E-C-R-E-T2. Traffic Capacity.

The total (one-way) freight traffic capacity of East-West transportation lines is estimated as follows:

Railroads	-	70 to 90 million m.t. per annum <sup>1/</sup>
Inland waterways	-	6 to 9 million m.t. per annum
Traffic through West Baltic ports		4 to 6 million m.t. per annum
<b>Total</b>	<b>-</b>	<b>80 to 105 million m.t. per annum</b>

If the Kiel Canal were kept open, another 20 million tons per annum could be moved via Hamburg.

3. Conclusions.

In round figures, anticipated East-to-West freight traffic requirements of 68 million metric tons in the first year, and 75 million tons in the second year compare with a capacity of at least 80 million tons, and possibly as high as 105 million tons (excluding the Kiel Canal). The available capacity thus seems adequate to handle the estimated load; but at first sight, there appears to be little leeway.

It should be noted, however, that the capacity estimate is on the low side. With careful planning much of the present "local" traffic could be moved over secondary lines, or by truck, or a combination of these two modes of transport. Road transport capacity, in particular,

<sup>1/</sup> The lower estimate assumes 4 double lines at 40 trains per day, plus 8 single lines at 15 trains per day, equal to 280 trains each way per day, of which 210 (75%) are freight trains, averaging 900 tons capacity. The higher estimate assumes 50 trains per day in each direction on double lines, and 20 on single lines. Full potential reached in six months. The assumptions on which these estimates are based indicate that the margin of error may be wide.

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could be increased considerably by moving trucks to the critical areas and by speeding truck turn-around. In an emergency, a larger proportion of the existing capacity could thus be made available for long distance East-West traffic. Line capacity could, moreover, be increased quickly and cheaply by putting in additional sidings, by installing better block systems, or by converting single track lines to one-way traffic. A combination of these measures might add at least 7 million tons to line capacity in the first year, and about 15 million tons by the end of the second year. Finally, the second track could probably be restored on East-German main lines in about 12 to 18 months. No East-West transport bottleneck should, therefore, be anticipated except in case of severe destruction.

In the absence of war damage, no serious transport problem is expected to arise in any other area. Italian coal requirements, amounting to about 9 to 10 million tons, could be supplied entirely by rail. Italian shipments of pyrites (400,000 tons) and sulphur (200,000 tons) northward by rail would raise no problem. Shipments of pyrites from Spain (1.5 million tons) and Portugal (700,000 tons) to other Western European countries would initially be a problem because of the poor condition of the Spanish railroads and the necessity of transshipment at the border. However, this problem is not of such magnitude that it could not be solved within a relatively short time. Moreover, it is reasonable to expect that some coastwise traffic in the Mediterranean would continue in spite of the blockade.

B. Coal

Continental Western Europe is normally self-sufficient in coal. Western European coal production declined sharply during the war, however, and its postwar recovery has not kept pace with that of other industries. Coal output in the Ruhr has not quite regained the prewar

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(1938) level, despite a considerable increase in the mine labor force. The same is true of the Netherlands. In France, the Saar, and Belgium, coal production is equal to or higher than prewar; but in these countries, too, output per manshift is still below the prewar norm. Coal production in all of these countries is limited primarily by the lack of development and modernization, which can be compensated only in part by increased employment of labor. As a result, the sharp increase in the demand for coal which occurred after Korea could not be satisfied from indigenous production, and during 1951 CWE had to import about 42 million metric tons of coal, or 13 percent of its apparent consumption. Of this amount, about 9 million tons came from Poland, 1 million tons from Czechoslovakia, 6 million tons from the UK, and 26 million tons from the US. In 1952, CWE is expected to import about the same quantity of coal as in 1951. After 1952, the Western European coal deficit is expected to decline as current and planned investments in the European coal mines come to fruition.

Of the 42 million metric tons imported in 1951, about 8 million tons were added to stocks. Continental Western Europe's net dependence on coal imports was, therefore, only 34 million tons out of a total consumption of 312 million tons, 1/ or 11 percent of actual consumption. Imports from the Soviet Bloc amounted to 3 percent, and imports from overseas (US and UK) to 8 percent of actual consumption.

If Continental Western Europe were over-run in mid-1952, coal production would undoubtedly fall; but output could probably be brought back to the pre-occupation level by FY 1954. Imports from Poland could be increased to around 20 million tons. (In order to minimize the burden on the East-West transportation system, Polish coal would probably be shipped to Scandinavia, Finland, Austria, and Yugoslavia, over North-South routes. See IV-A.) Coal consumption in FY 1954 would thus be only slightly lower than in 1951.

1/ Hard coal and lignite, in terms of hard coal equivalent.

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To be sure, requirements would increase. Petroleum products are now contributing about 14 percent of Continental Western Europe's total energy requirements, equivalent to about 450 million metric tons of bituminous coal. With the civilian petroleum supply reduced to one-third, at least 40 million tons of coal would, therefore, be required to make up for the reduction in the petroleum supply. 1/

Increased military production, with the accompanying rise in the proportion of heavy industrial and synthetic products in the industrial product mix, would also tend to increase coal requirements. On the other hand, certain other requirements would be reduced, including bunker coal, and coal requirements of consumer goods industries. Coal allocations for space heating could undoubtedly be reduced. Electric utilities which have made increasing demands on the coal supply in recent years, could probably get by with allocations approximately equal to those received in 1951, as increased power requirements by industry would be offset, and perhaps more than offset by automatic power savings due to blackouts and brownouts (see IV-C, below). It is probable that on balance, Western European coal supplies would be adequate to meet all essential requirements.

The Soviet Bloc, which produced about 450 million metric tons 2/ in 1951, is self-sufficient in coal. Production is expected to increase to 471 million tons in FY 1952 and 546 million tons by FY 1954. These supplies would be ample to satisfy essential wartime requirements in the Soviet Bloc, with a margin of about 20 million tons which would be available for export to CWE.

1/ This does not take account of the lower efficiency of coal compared with petroleum products in certain uses.

2/ Hard coal and lignite, in terms of hard coal equivalent.

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S-E-C-R-E-TC. Electric Power

Without exception in either the Soviet Bloc or the Western European nations, the trend in electric power production has been continuously upward, and it is expected that this trend will continue.

Electric power production in CWE is expected to reach an annual rate of 215 billion KWH as of mid-1952, of which more than half is hydro-power. There would probably be some expansion of generating capacity under Soviet occupation, though the rate of expansion would be less than in the past few years. However, if necessary, output from the existing generating capacity could be considerably increased through additional hours of utilization.

Electric power production in the USSR will amount to about 120 billion KWH in 1952, of which only 15 percent is hydro-power. By 1954, electric power production in the USSR should reach about 150 billion KWH. Production for the total Soviet Bloc, estimated at 173 billion KWH in 1952, is likely to increase to 213 billion KWH in 1954.

Under wartime conditions, industrial demands for electric power would undoubtedly increase faster than normally, but other demands for electric power would increase less than normally, or perhaps even decline, as a result of brownouts and blackouts. It is likely, therefore, that electric power output would be adequate to meet the total demand.

D. Metals <sup>1/</sup>1. Steel.

Crude steel production in Continental Western Europe by mid-1952 will probably run at an annual rate of 43.5 million metric tons. This will not only be enough for internal consumption requirements, but will

<sup>1/</sup> See Annex 4.



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leave about 10 million tons available for export. <sup>1/</sup> Crude steel output in the Soviet Bloc is expected to reach an annual rate of 41.5 million tons by mid-1952. In the event of Soviet occupation of CWE, the Soviets would command a combined crude steel production of 85 million tons as of mid-1952. The level of civilian and military production which this quantity of steel could support may be judged by comparing this figure with the average annual US steel output during 1942 to 1944 of 80 million metric tons. Access to Western European production would eliminate the steel shortage now experienced in the Soviet Bloc--particularly in the Satellite countries--as CWE could make substantial surpluses available to the USSR (at least 10 million tons), and still retain sufficient supplies for civilian and military production.

While crude steel production in the Soviet Bloc would continue to increase to about 49 million metric tons by mid-1954, further increases in Western European crude steel output would probably be impeded by shortages of iron ore and scrap. Although Sweden would be capable of producing for export some 16 to 17 million tons of high-grade ore, only about 9 million tons could probably be shipped in the first year of occupation because this appears to be the maximum amount which can at present be moved through Swedish Baltic ports. About 3 million tons of this would be shipped to Poland and Czechoslovakia; 6 million tons would go to CWE. Total Continental Western European domestic ore production would be about 75 million tons, but its average iron content is only 33 percent, as compared with 60 percent for the Swedish ore. The total quantity of iron ore expected to be available for consumption in CWE plus circulating scrap would yield only about 34 million tons of metal. It is unlikely that CWE could collect more than 6 million tons of old scrap annually. Total crude steel production

<sup>1/</sup> Crude steel equivalent of net steel exports (mostly in form of finished steel).

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would, therefore, probably not exceed 40 million tons per year. However, if necessary, transportation and loading facilities for moving iron ore through the Baltic could be expanded, and Continental Western European crude steel output could then be increased to about 45 million tons, as coke and manganese supplies are expected to be ample. Full utilization of the existing capacity of 49 million tons appears to be precluded by the age and condition of the equipment. Furthermore, there would be problems arising from the limited capacity for rolling the specialized types of products needed for military end products.

2. Aluminum.

Acquisition of the Continental Western European aluminum production capacity of 450,000 metric tons would increase the Soviet Bloc potential from 288,000 metric tons in mid-1952 to 738,000 tons. By mid-1954, the combined capacity would reach about 800,000 tons. Continental Western Europe's capacity at present is not fully utilized, primarily because of power shortages; but under wartime conditions, sufficient electric power would undoubtedly be made available. Full utilization of the available aluminum production capacity would require about 4 $\frac{1}{2}$  percent of the total available electricity in the combined area.

If consumption in CWE were to continue at levels comparable to 1951, demands would be about 300,000 tons, leaving 150,000 tons available for export to the Soviet Bloc. If necessary, civilian consumption in CWE could be further reduced and well over half of the total output could be diverted to military production in CWE or the Soviet Bloc. Substantial quantities would undoubtedly be used to substitute for other materials, particularly copper.

3. Magnesium.

Production of magnesium is geared to current market demands which, in turn, are closely associated with the manufacture of armaments. Plant capacity in CWE and the Soviet Bloc, including potential capacity

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in Western Germany which is partially dismantled, is estimated at 30,500 metric tons per year. Raw materials are available within the area.

4. Lead.

Mine production of lead in 1951 in the combined area is estimated at about 410,000 tons, or nearly 60 percent of apparent consumption of primary lead. By mid-1954, production could be increased to about 470,000 tons. Together with lead obtained from secondary recovery, these supplies would be adequate for essential industrial requirements.

5. Zinc.

The Soviet Bloc is a net importer of zinc. In 1951, the Bloc is believed to have produced about 225,000 metric tons of primary zinc, as compared with an apparent consumption of some 300,000 tons. By mid-1954, Soviet Bloc production of primary zinc could probably be increased to approximately 280,000 tons.

CWE is also a net importer of zinc. In 1951, the area produced some 300,000 tons of zinc from domestic mines, and consumed about 480,000 tons. By mid-1954, mine production could probably be increased to about 340,000 tons.

Essential civilian requirements in CWE amount to some 100,000 tons per year. Armament production on the scale of the present NATO program would require approximately 80,000 to 100,000 tons of zinc annually. About 100,000-160,000 tons would, therefore, be available for export to the Soviet Bloc which, together with Soviet Bloc production, would be enough to meet the military and essential civilian requirements of the Soviet Bloc.

6. Cobalt.

Cobalt is important in the production of certain alloy steels used in military equipment. Production of cobalt in CWE was negligible in 1951, but it could be increased substantially, particularly in Finland.

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By mid-1954, production in CWE could be stepped up to about 600 to 900 metric tons or one-half to two-thirds of apparent consumption in 1951. Apparent consumption in CWE was about 1,300 tons, with signs of a critical shortage developing by mid-1952.

Cobalt production in the Soviet Bloc, amounting to about 950 tons, is believed to cover present requirements. By mid-1954, production could probably be increased to 1,500 tons.

It may be assumed that the bulk of cobalt available after mid-1952 would be assigned to military production since essential civilian requirements are negligible. Where possible, other metals, such as vanadium would be substituted for cobalt.

7. Molybdenum.

Consumption of molybdenum in CWE totalled about 2,000 to 2,500 tons in 1951. Production was insignificant. Production of molybdenum in the USSR, estimated at 1,450 tons in 1951, plus receipts from China, do not meet USSR requirements, and there is also a shortage in the Satellite countries. These deficits can, however, be met by substituting tungsten, which for many uses is superior to molybdenum. The available molybdenum should be sufficient to meet the small non-substitutable requirements, for instance in electronic tubes in both Western Europe and the Soviet Bloc.

8. Nickel.

In 1951, apparent consumption of nickel in CWE was about 18,000 tons. Production was insignificant. The Soviet Bloc, on the other hand, produced a slight surplus over its requirements of around 25,000 tons. By mid-1954, Soviet Bloc production could be increased sufficiently to cover about 75 percent of the 1951 apparent consumption of the combined area. Stocks already accumulated in the Soviet Bloc could provide additional supplies.

S-E-C-R-E-T9. Tungsten.

By mid-1952, tungsten production in CWE and the Soviet Bloc combined is expected to be at the rate of about 15,000 metric tons per year. Inventories in the USSR are estimated at 10 to 15,000 tons. By mid-1954, the production of the combined area is likely to increase to more than 18,000 tons. These supplies are sufficient to meet all requirements indefinitely and are large enough to offset the molybdenum deficit by substitution.

10. Vanadium.

There is no current production of vanadium in CWE. During World War II, the estimated annual capacity in Axis Europe for processing vanadium from iron ore slags was about 1,000 metric tons. Production was discontinued after the war. Estimated vanadium production in the Soviet Bloc during 1951 is 1,425 tons and is expected to increase to 1,825 tons by mid-1954. Current vanadium production in the Soviet Bloc apparently meets consumption and stockpile requirements. It is estimated that vanadium requirements for the combined area could be met during the period under consideration by exports from the present Soviet Bloc to CWE and the reactivation of slag recovery in Germany.

11. Manganese and Chromite.

The USSR produces such large quantities of these metals that the small Western European supplies could easily be augmented to meet all requirements.

E. Chemicals

Acquisition of Continental Western Europe would more than double the Soviet production capacity in basic chemicals. The production capacity of the combined area would be more than adequate to sustain a major war effort indefinitely.

1. Sulphurous Materials.

In 1950, CWE consumed 2.9 million metric tons of sulphur in all

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its forms. In 1951, apparent consumption rose to about 3.3 million tons, but this probably included some additions to stocks. CWE imports some sulphur from other areas, including the US; but these imports are approximately offset by exports, primarily from Italy, Spain, and Portugal to other areas (including the UK). CWE as a whole could be self-sufficient in sulphur if the entire surpluses of Italy, Spain and Portugal were retained within the area. Total production of CWE in 1951 was 2.9 million tons; by mid-1952, it is expected to rise to 3.2 million tons. Most of the Western European production is based on pyrites; but Italy produces about 200,000 tons of native sulphur, and another 200,000 tons is produced in the form of recuperated sulphur.

The USSR, which produced about 1.2 million tons of sulphur in 1951, is self-sufficient in sulphurous materials. The European Satellites, on the other hand, are short of sulphurous materials and depend partly on imports from Southern Europe. With the acquisition of the Southern European deposits by the Soviets, total sulphur supplies could undoubtedly be redistributed in such a manner as to satisfy all essential requirements in the combined area. To be sure, demands for military production would increase, but this would be offset by reduced demands for fertilizer production, which would be limited by other factors. Also, total production of sulphur in all its forms would probably increase, particularly in the Soviet Bloc.

The transportation of more than 2 million tons of pyrites from Spain and Portugal would raise some problems; but these could probably be surmounted (see Section IV - A).

Processing facilities for making sulphuric acid are more than adequate. Production in the Soviet Bloc, amounting to 4.4 million tons in 1951, is expected to rise to 5.7 million tons by mid-1954. Production in CWE, amounting to 7.1 million tons in 1951, will increase to 7.5 million tons by mid-1952. The total production of the combined

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area in 1951--11.5 million tons--was almost equal to that of the US. Between one-third and one-half of the Western European output was used in the manufacture of fertilizer.

2. Ammonia.

Ammonia is derived from two major sources: (a) As a by-product of coke ovens and manufactured gas plants; (b) Through the fixation of atmospheric nitrogen. The principal uses are in the production of fertilizer and of explosives. During wartime, increased production of explosives is made possible in part by increased ammonia production, and in part by reducing the production of nitrogenous fertilizer.

In 1951, CWE produced about 1.7 million tons of synthetic ammonia (in terms of pure N). The estimated production capacity was 2.1 million tons. Production in the Soviet Bloc amounted to 1 million tons in 1951, and further expansion of production facilities should raise this to about 1.2 million tons by mid-1954. The total output of the combined area would be sufficient to meet all essential requirements.

3. Chlorine.

Chlorine is a chemical of great importance for the manufacture of a large variety of products, including rayon, pulp and paper, synthetic elastic materials, and chemical warfare agents. The production of chlorine in the Soviet Bloc is small--about 500,000 tons--and constitutes a potential bottleneck. However, acquisition of CWE--with a production of about 600,000 tons--would more than double the chlorine production capacity of the Soviet Bloc. But even with the inclusion of CWE, the total Soviet Bloc production, amounting to about 1.1 million tons, would be only about half of that of the US. Careful allocation of chlorine to the most essential needs would be necessary.

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Liquid chlorine is difficult to store as it must be kept in containers capable of withstanding very high pressures. The quantity that can be stored is, therefore, limited to less than one month's production. The availability of tank cars for the transportation of chlorine, which must be of special design and able to withstand high pressures, may also raise a problem. Chlorine production requires large quantities of electric power.

4. Carbide.

Approximately one-third of the production of carbide in most countries is used for the production of acetylene for metal cutting and welding. The balance is used for the production of a long line of chemicals and synthetic rubbers. Carbide is also used for the production of cyanide fertilizers; but this requirement can be easily curtailed to release carbide for other uses.

Production of carbide in the Soviet Bloc in 1951 amounted to 1.2 million metric tons, substantially more than present US production. Production in CWE was even greater--more than 1.4 million metric tons. A large proportion of the Soviet Bloc production is used in the production of synthetic rubber. Carbide, like chlorine, requires large quantities of electricity for its production. The total production capacity for the combined area is ample to meet all essential requirements.

5. Tetraethyl Lead.

Tetraethyl lead is important in the production of aviation gasoline. It is believed that the USSR, with a production of between 5,000 and 7,000 tons, covers its requirements and probably has excess capacity over its requirements. CWE, on the other hand, produces only about 4,300 tons--most of this in France--and depends on imports from the UK and the US. However, Continental Western European production



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is scheduled to increase to 6,000 tons by mid-1952, and could be expanded further in a fairly short time. Production in the Soviet Bloc is also likely to increase substantially.

F. Rubber

In 1950, Continental Western Europe consumed almost 400,000 metric tons of rubber. Almost 85 percent of this was imported--nearly all natural rubber; the balance was from reclaimed rubber.

Consumption in the Soviet Bloc also amounted to about 400,000 tons; but nearly two-thirds of this was produced within the area (somewhat less than half in the form of synthetic rubber, and more than 15 percent in the form of reclaimed rubber). Imported natural rubber contributed only a little more than one-third. Synthetic rubber production in the Soviet Bloc is being expanded rapidly and is expected to reach 257,000 tons by FY-1952. In addition, the Soviet Bloc is believed to have accumulated stocks amounting to nearly 300,000 tons. Continental Western European stocks are about 50,000 tons.

Assuming the outbreak of hostilities and the over-running of CWE by the Soviets in mid-1952, normal imports of natural rubber would be stopped. It is estimated that only about 50,000 tons per year could be obtained by blockade running and other means during wartime. Under present and contemplated plans for reactivating Western German, Italian and Swedish synthetic rubber plants, with major production in the Federal Republic of Germany, CWE could contribute to Soviet Eurasian supplies only 17,000 tons of synthetic rubber in FY 1953 and about 37,000 tons in FY 1954, in addition to an estimated 75,000 tons a year of reclaimed rubber. Output from planned French synthetic rubber capacity would not be available before FY 1955, even if plant construction were started by mid-1952. Thus, in view of the limited

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stocks, CWE would be dependant on the Soviet Bloc for the major portion of its rubber requirements. The USSR and Eastern Germany would have to furnish most of the synthetic rubber for the entire area under Soviet control.

During the two years beginning in mid-1952, about 440,000 tons of synthetic and reclaimed rubber would be available per year in the combined area from indigenous production. <sup>1/</sup> This would be sufficient to cover about half of the estimated 1951 consumption. If, in addition, about 50,000 tons of natural rubber can be imported in each of these years, consumption could rise to nearly 60 percent of normal. Consumption could be further increased to about two-thirds of normal, if part of the accumulated stocks were released. Between 450,000 and 600,000 tons could be made available for consumption each year without exhausting stocks. On the basis of the available consumption pattern, it is believed that these supplies would be sufficient to cover all military and essential civilian requirements.

G. Textiles

Continental Western Europe normally imports about two-thirds of its textile fiber supplies from overseas areas. If these imports were cut off, domestic consumption of apparel fibers in the area, currently amounting to 2 million tons, or about 9 kgs. per person--three times the per capita consumption in the Soviet Bloc--would decline to about the same level as now prevailing in the Bloc. Cotton consumption would be reduced to practically zero, and wool consumption would decline to about 20 percent of normal. No relief could be expected from an expansion of synthetic fiber output, as the basic raw materials required for this purpose (coal, sulphur, etc.) would probably be allocated to higher priority uses. However, the output of flax and hemp would undoubtedly be increased in an attempt to

<sup>1/</sup> See Annex 5.

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partially replace the imports of hard fibers and jute from overseas sources.

In Soviet Bloc countries, almost the entire 1.8 million metric tons of apparel fibers currently processed are from indigenous sources. These processed fibers provide an annual domestic consumption of less than 3 kgs. per person. It is likely that fiber consumption in Eastern Europe would not be reduced much below present levels, and that fibers would not be exported to CWE in significant quantities.

In view of the ample stocks of textiles and textile products in the hands of consumers and distributive channels, CWE would not be seriously affected for several years by the sharp reduction of supplies of new textile fibers which would occur under Soviet occupation. Increased reprocessing of fibers and textile products would also alleviate the situation. The cutting-off of industrial fiber imports would create some problems of adjustment, but the levels of agricultural and industrial activity in CWE are not likely to be materially affected by these shortages. Current stocks of industrial fibers and products are high and more systematic efforts would undoubtedly be made to re-use them.

Soviet Bloc consumption of these industrial fibers is already limited by the existing controls on East-West trade which greatly reduced imports of jute, abaca, sisal and henequen by Soviet Bloc countries. Soviet Bloc countries have replaced these imported fibers increasingly by indigenous fibers, particularly flax and hemp, in the making of rope, cordage, twine, bagging and other industrial products. A further reduction of imports of hard fibers will have no serious effect on the Soviet Bloc.

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V. PRINCIPAL SOVIET GAINS

A. Introduction

1. Increase in General Economic Potential.

The main contribution of Continental Western Europe to the Soviet military effort would be in broadening its economic base by supplying steel, aluminum and other metals, basic chemicals, machine tools and other machinery, optical and precision instruments, electronic equipment, and transportation equipment to the USSR. The excess petroleum refining and metal smelting and refining capacity that would exist in CWE under Soviet occupation would provide an important cushion against war damage. In the longer run, the unlimited ability of the Soviet Union to draw on Western Europe's technical skills, its patents, and its industrial know-how, would be even more important. CWE would be a substantial drain on the USSR in petroleum, but even in this case Western Europe's essential requirements, amounting to about one-third of normal, could be met without reducing civilian consumption in the USSR by more than about 20 percent below the FY 1952 level. In food, CWE would be a net gain to the USSR in the first year, but a net liability from the second year onward: as CWE would require sizeable Soviet shipments of grain and possibly some oil seeds which would be only partly offset by Soviet requisitions of livestock products in Western Europe. There would also be some drain on Soviet supplies of certain non-ferrous metals and rubber.

2. Increase in Military Production Potential.

Acquisition of CWE by the USSR would add a great additional potential production capacity of arms and equipment, which in a few industry branches is greater than that of the present Soviet Bloc countries combined. Relatively little of this potential would, however, be immediately mobilized in support of the Soviet war effort because, with few exceptions, such installed and/or operational military

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production capacity as is currently available is comparatively small. Were the Soviets, therefore, to decide upon a large-scale arms production in COME, aiming at the development of its vast potential, they would face some of the very same problems as the member nations of NATO in COME are currently facing in their efforts to increase their munitions production.

3. Problems of Conversion to War Production.

The conversion by the Soviets of Western European industry to direct military production would be slower than conversion in the USSR. Soviet industry is already largely converted since current production of military items is high relative to the production of civilian goods. Moreover, many Soviet plants, now producing civilian goods, are designed for rapid conversion (in some cases in about 90 days) to war production. COME, on the other hand, is only slowly increasing its output of military items, and only slowly preparing plants for rapid wartime conversion.

A few products of Western European industries, such as electronic equipment and certain chemicals could be quickly diverted to military use. The electronics industry could readily produce the components for specialized items, such as radar, guided missiles, and proximity fuzes. Chemicals (such as nitric acid, ammonia, toluene, benzene, phenols, and chlorine) could be immediately diverted from civilian use to the manufacture of high explosives, chemical warfare agents, and other war materials.

The rapidity of conversion in COME would depend on the kind of conversion attempted by the Soviets. There are two general courses that could be followed: (1) Armaments production could be centered in the Soviet Bloc, production in Western Europe being oriented toward supplying the Soviet armaments industry with materials,

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specialized machinery, technical and skilled personnel, and arms components; or (2) armaments production could be divided between CWE and the Soviet Bloc. The first type of conversion could probably be completed within one to two years, with increasing efficiency; the second would probably require two to four years.

In general, under the assumptions of this study, the first course is most likely to be followed in actual practice. In particular, in armaments industries where the USSR is strong (e.g., tanks, aircraft), production is likely to remain centered in the USSR because (1) the Soviets would expect an Allied ground invasion of CWE in 1954; (2) armament production in CWE would be more exposed to air attacks. In combat shipbuilding, on the other hand, the Soviets would probably make full use of Western European shipyards. The Soviet decision as to which of the two conversion plans would receive greater emphasis would, of course, be influenced greatly by the extent to which the armaments industries in the USSR itself had suffered from air attacks.

4. Problems of Standardization of Arms and Industrial Equipment.

The problem of standardization which the Soviets would encounter in Western Europe is twofold. The first problem concerns standardization of weapons, armaments, and munitions. The second concerns standardization of industrial equipment. In the first case, the Soviets would probably not attempt to standardize Western European military production to Soviet types. Valuable time would be lost and production would be reduced during the interval. Therefore, Western European arms would probably be shipped to Chinese Communist armies, to the Satellites, or used to equip Soviet troops.

In the second case, Western European industrial equipment is currently of the same general types as equipment in the USSR. The Soviet Bloc could readily utilize superior items of equipment, such

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as high-speed machinery, and special types of machine tools, without any adaptation. Wherever specialized equipment could be utilized for producing weapons and munitions of types and caliber different from those in the USSR, the Soviets would continue to produce the special types of weapons and munitions, if expedient, or adapt the equipment for use in Soviet plants.

B. Sectors which would Make Major Contributions to Soviet Potential

Apart from Western European contributions of steel, aluminum, lead, zinc, and basic chemicals--which are discussed in Section IV--the most significant Western European contributions to the USSR would be in machinery, electronic equipment, shipbuilding, and to a lesser extent, aircraft, and ordnance.

1. Machinery.

Continental Western European production of machinery is considerably larger than that of the Soviet Bloc. In some sectors of the machinery industry, CWE has surplus machinery production capacity which would be of great value to the USSR. Through the acquisition of CWE, the Soviet Bloc, now handicapped by the lack of variety of machinery for filling specific needs, would gain a wider range of types and sizes of machines.

Availability of special machinery in CWE would permit the USSR to concentrate on production of standardized items required in large quantities. This would result in a larger quantity of machinery produced due to the resulting higher efficiency in plant operation. Alternatively, the USSR could acquire Western European know-how and machine tools for the production of Western types of special machinery in the USSR.

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Although the Soviet Bloc has reached a high level of technology in machinery production, the skills necessary for its successful application are less widespread than in the West. The acquisition of CWE would provide the USSR with a much larger pool of highly skilled engineers and workers than is available in the present Soviet Bloc. Also, many technological developments in Western Europe have not been available to the Soviet Bloc.

Of particular value to the Soviet Bloc would be the acquisition of Continental Western Europe's productive capacity in metal-cutting machine tools. Continental Western Europe's capacity for the production of machine tools on a one-shift basis (about 150,000 units per annum) is roughly equal to that of the Soviet Bloc on a two to three-shift basis. Continental Western Europe's inventory of machine tools (about 2.3 million units) is also considerably larger than that of the Soviet Bloc (about 1.8 million). Besides gaining quantitatively by adding enormously to its total machine tool inventory and production capacity, the Soviet Bloc would gain qualitatively by being able to fill its present deficiencies in gear-making machine tools, precision instruments, jig borers and the like, and the larger and heavier machine tools (large vertical and horizontal boring mills, planers, etc.) which are produced in CWE.

CWE has a highly developed automotive industry which in 1951 produced 825,000 passenger cars, 367,000 trucks, and 16,000 buses. This compares with an estimated Soviet Bloc production of 85,000 passenger cars, 450,000 trucks, and 5-10,000 buses. In the event of a Soviet occupation of CWE, all passenger car production could be converted to armament production, as Soviet needs for passenger cars could be satisfied by confiscating cars in CWE. It is estimated that 4.5 million passenger cars were registered in CWE at the end



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of 1951. Most of the Soviet requirements for trucks and buses could probably also be satisfied out of the existing inventory (2.7 million in CWE, as compared with 1.7 million in the Soviet Bloc). Most of the plants producing trucks, as well as those producing tractors, and some of the plants producing locomotives and rolling stock could be converted to armament production.

CWE would also be a very rich source of anti-friction bearings to the Soviet Bloc. Its current output of 145 million units per year is two-thirds larger than the estimated output of the Soviet Bloc (88 million units). By placing its factories on a three-shift basis--which would require additional skilled labor and additional high-grade bearing steel--present production in CWE could be increased to almost 300 million units a year.

Traditionally, Western Europe has supplied Eastern Europe with anti-friction bearings. The quality of bearings, and the range of types and sizes of bearings produced in Western Europe have been far superior to Soviet Bloc production. It is estimated that over 30 million bearings are now being imported by the Soviet orbit from Western Europe. The acquisition of CWE by the USSR would eliminate the shortage of anti-friction bearings in the Soviet orbit.

## 2. Electronic Equipment.

The acquisition of CWE would increase the Soviet production of electronic equipment almost fourfold. The estimated annual production rate as of mid-1952 is 252 million U. S. dollars in the present Soviet Bloc, and 695 million dollars in CWE. Moreover, since the Western European electronics industry is currently working on a single shift operation, production in CWE could be increased further. A 75 percent increase is believed possible within one year, given a two-shift operation. The Soviet potential in this field would then be nearly seven times what it is today.

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The electronics industry in CWE is well-equipped to produce the four main categories of electronic items: (1) tubes; (2) radio equipment; (3) telephone and telegraph equipment; and (4) cable and wire. Although production in specialized electronic equipment, such as radar, is currently not on a large scale, there are ample production facilities for producing such equipment. Electronic research in CWE is on a par with that in the US.

West Germany has the largest potential capacity for electronic production on the Continent of Europe. The industry is currently operating at about 60 percent of capacity, based on one-shift operation. Telefunken and the German branch of Philips account for 75 percent of the tube output, while Siemens and Halske and AEG are the largest telephone and telegraph producers. Radio equipment accounted for 45 percent of the 1951 total electronic production, with telephone and telegraph equipment accounting for 25 percent and tubes 10 percent of total production. Western Germany's cable and wire capacity is greater than that of any continental European country and accounts for 20 percent of Germany's present electronic production.

In the Netherlands, the radio and tube sectors of the industry occupy the predominant position. The leadership in this field is held by Philips, not only in the Netherlands but in all of Europe. Philips would be one of the greatest single assets in the Soviet acquisition of Western Europe. This company has the knowledge, skill, and production facilities necessary to produce any of the special items required by the USSR, including the facilities to produce radar, sub-miniature tubes for VT fuzes (on which considerable research work has been done), and electronic parts for guided missiles.

The present French electronic production can be increased by 30 percent without changing the present one 8-hour shift per day.

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France is one of the few countries in Europe currently engaged in the production of radar, though on a small scale. Most of Sweden's electronics production is devoted to telephone, telegraph, wire and cable manufacturing (75 percent). Radio accounts for 17 percent and telephone repeater tubes for the remaining 8 percent. Switzerland also possesses a diversified electronic industry. The technical, research, and production skill of the industry is high and it is capable of producing all of the specialized items required by the Soviets, including radar, VT fuzos, and electronic parts for guided missiles.

3. Shipbuilding.

Soviet acquisition of CWE would add greatly to the present Soviet naval and merchant marine construction capabilities. The present limited scope of naval construction in CWE, however, would make the immediate gains to the Soviet small. While few naval vessels would be captured, a considerable portion of CWE's large merchant marine would fall under Soviet control. As concerns underwater weapons, mines, torpedoes, and component parts, CWE--particularly Western Germany, Italy, and France--would add considerably to the present Soviet production capacity.

CWE's merchant shipbuilding capacity, as of mid-1952, computed at 2.9 million gross tons (tonnage which can be under construction at any given time), is more than ten times greater than that of the Soviet Bloc countries combined. The estimated annual rate of production in CWE of 1.5 million gross tons as of mid-1952 may be compared with 109,000 tons in the present Soviet Bloc. In the event of Soviet acquisition of CWE, production would probably drop to about one-third of the mid-1952 level. Even so, production in CWE would be more than three times the production capacity of the present Soviet Bloc countries.

Since the end of World War II, shipbuilding plans in CWE have been weighed heavily with tankers and passenger ships, but principally

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with tankers, particularly in Holland and Sweden. In the construction of merchant vessels, shipbuilders have been turning more and more to the use of diesel power. In general, the trend has been toward larger, faster, and more powerful merchant vessels. The Soviet Bloc countries so far have produced no significant program of merchant ship construction.

While the merchant ships under construction in CWE would probably fall into Soviet hands, a far more important gain would be in the Soviet acquisition of control of a sizeable part of the merchant shipping inventory of CWE, estimated to total 24.3 million gross tons as of mid-1952, compared with 997,000 tons in the present Soviet Bloc countries.

Soviet gains resulting from the acquisition of Western European navy yards would be impressive, but currently existing production conditions would greatly reduce any short-run benefits to be derived from it. As of mid-1952, the annual capacity in CWE is computed at 1.1 million standard displacement tons, equivalent to 2.6 times the naval construction capacity of the present Soviet Bloc countries. Production is, however, far below capacity in CWE, with only about 112,000 tons under construction by mid-1952, compared with an estimated 235,000 tons in the USSR. New construction is not expected to become a significant factor, at least in the first few years. Rather than employing the CWE naval shipyards for any construction of major combatant types, it is believed that the capacity would be utilized for (a) repair of both naval and merchant vessels; (b) construction of minor combatants; (c) construction and conversion of merchant vessels.

The Soviet Union and her present Satellites are believed able to maintain their present trend of naval construction indefinitely. With the acquisition of CWE, however, the program could be speeded up as materials and components could be obtained in Western Europe.

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(A conservative estimate of Germany's effort in submarines alone during 1944 is around 300,000 tons.)

Most of the operational naval ships of the CWE nations (approximately 816,000 tons, mid-1952) are assumed to escape to friendly Allied ports before a Soviet advance into Western Europe.

#### 4. Aircraft.

The Soviets would acquire a considerable production capacity in CWE in air frames and aero engines. The air frames production capacity of CWE, as of mid-1952, is estimated at about 17,700 air frames. The aero engine production capacity in CWE, as of mid-1952, is estimated at about 18,000 engines.

The actual production of aircraft in CWE in 1951 was only 1,572, including about 640 combat planes, 350 of which are jet fighters. It is estimated that CWE aircraft production will run at the rate of nearly 1,800 per annum by mid-1952, but even so it will be only a small fraction of the aircraft production in the Soviet Bloc. 1/

While present capacity in CWE would permit aircraft production to be increased ten-fold, actual output under occupation conditions is expected to be far below that figure. If the Soviets choose to utilize the acquired production facilities fully, it is estimated that five years would be required to reach the above capacity figures. Production in Western Europe during the first year of the occupation would probably be not more than 5 percent of its capacity, due to problems of disorganization, reorganization, retooling and shortages of skilled personnel.

In view of the relatively small addition that the aircraft industry of CWE could make to the Soviet Bloc aircraft inventory and to the USSR's annual production, the Soviets would probably not attempt to mass produce aircraft in Western Europe. The Soviet expectation of an Allied ground invasion in 1954, as is assumed for this study, and the

1/ See Annex 6

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greater possibility of Allied air attack on aircraft installations in CWE also support the thesis that aircraft production in Western Europe would not be stimulated by the Soviet occupation. It is, however, likely that some sections of the aircraft industry and personnel of CWE would be transported behind the border of the USSR and that the remainder would be used for the repair and maintenance of the Soviet Air Force operating in Western Europe.

5. Ordinance.

The USSR could acquire in CWE under optimum conditions an estimated annual production capacity, by mid-1952, of some 8,700 armored vehicles equivalent to 14 percent of the capacity of the present Soviet Bloc. The USSR would also acquire some of the 15,500 armored vehicles now inventoried as in-being in CWE. In addition, the USSR would gain an estimated annual production capacity of about 10,000 artillery pieces, 75mm and above, which is equivalent to about 9 percent of the capacity of the present Soviet Bloc. Some of the 20,500 artillery pieces now inventoried as in-being in CWE would also fall into Soviet hands. The estimated annual production capacity of 334,000 metric tons of explosives in CWE by mid-1952 is equivalent to 37 percent of the capacity of Soviet Bloc countries. The annual rate of production of explosives, military and industrial, in CWE, is estimated at about 200,000 metric tons by mid-1952, as compared with 390,000 metric tons in the Soviet Bloc.

While the estimated production capacity of armored vehicles in CWE is considerable, it is doubtful that the Soviets would utilize this production capacity during their initial period of occupation for other than repair and maintenance purposes, as it is currently estimated that the USSR has some 60,000 armored vehicles in-being,

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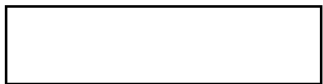
which is adequate to support Soviet military operations for at least a year. Utilization by the Soviets of the considerable production capacity in CWE would be largely determined by the extent to which production facilities in the USSR are damaged by air attacks.

As in the case of armored vehicles, the USSR is believed to have an impressive inventory of artillery pieces, including 110,000 pieces of 76mm and above. Also, by mid-1952, it is estimated that the USSR will have a production capacity 10 times larger than that of CWE. It seems doubtful, therefore, that the Soviets would feel any great need of exploiting the artillery production capacity of CWE to its maximum. However, in view of their anticipation of a seaborne invasion, it seems probable that the Soviets would direct a portion of the CWE artillery capacity to the production of coastal and antiaircraft guns.

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ANNEX 1

PETROLEUM SUPPLIES

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SECURITY INFORMATION

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ANNEX 3

FOOD BALANCES  
CONTINENTAL WESTERN EUROPE  
CONSUMPTION YEAR 1951-52, 1952-53, and 1953-54

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CONTINENTAL WESTERN EUROPE\*  
 Advance estimate of food supplies, consumption year 1951-52  
 (excluding alcoholic beverages)

Population: 243,847,000

		Supply			Utilization				Supply for food				
		Production	Trade	Total supply	Nonfood uses			Total	Total gross	Per Capita			
					Seed and waste	Feed	Industrial			Extr. rate	Per year gross	Per Day R E T	
													1,000 metric tons
Wheat and rye	(Dom.)	33,791	- 435	33,356	4,454	2,802	71	7,327	26,029	80	106.7	85.3	840
	(Imp.)		+8,228	8,228		40		40	8,188	80	33.6	26.9	265
	(Total)	33,791	+7,793	41,584	4,454	2,842	71	7,337	34,217	80	140.3	112.2	1,105
Coarse Grain	(Dom.)	31,578	- 234	31,344	2,946	22,567	1,417	26,930	4,214	78	19.1	14.1	141
	(Imp.)		+5,533	5,533		4,358	341	4,699	834	78	3.4	2.7	27
	(Total)	31,578	+5,299	36,877	2,946	26,925	1,758	31,629	5,248	78	21.5	16.8	168
Rice	(Dom.)	880	- 193	687	46	3	7	56	631		2.6		25
	(Imp.)		- 301	301					301		1.2		12
	(Total)	880	+ 108	988	46	3	7	56	932		3.8		37
Sugar	(Dom.)	4,717	- 248	4,469			15	15	4,454		18.3		194
	(Imp.)		+ 929	929					929		3.8		40
	(Total)	4,717	+ 681	5,398			15	15	5,383		22.1		234
Potatoes	(Dom.)	62,655	- 379	62,276	14,703	17,755	1,844	34,303	27,974		114.7		219
Meat	(Dom.)	8,554	- 527	8,027					8,027		32.9		207
	(Imp.)		+ 307	307					307		1.3		8
	(Total)	8,554	- 220	8,334					8,334		34.2		215
Fats	(Dom.)	3,288	- 372	2,916			407	407	2,509		10.3		232
	(Imp.)		+1,835	1,835			453	453	1,134		4.8		108
	(Total)	3,288	+1,463	4,551			860	860	3,691		15.1		340

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TOTAL CALORIES INDICATED ABOVE:	DOMESTIC	1,858	-	IMPORTED	460	TOTAL INDICATED ABOVE:	2,318	Domestic	2,253
CALORIES FROM OTHER PRODUCTION:	"	395	"	35	495	TOTAL OTHER	430	Imported	455
		<u>2,253</u>		<u>495</u>			<u>2,748</u>	Total	<u>2,748</u>

\* Includes the following countries: Austria, Belgium, Denmark, Finland, France (includes Saar), Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Western Germany (includes West Berlin), Yugoslavia.

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CONTINENTAL WESTERN EUROPE \*  
 Advance estimate of food supplies, consumption year 1952-53  
 (excluding alcoholic beverages)

Population: 245,461,000

		Supply			Utilization			Supply for food					
		Production	Change in stocks <sup>a/</sup>	Total supply	Seed and waste	Feed	Industrial	Total	Total Extr. rate	Per year Gross	Per Capita N E T		
		1,000 metric tons						%	kgs.	kgs.	Calories		
Wheat and rye	(Dom.)	33,395		33,395	4,375	1,990	60	6,425	26,970	90	109.9	98.9	940
	(Stocks)		-2,205	2,205					2,205	90	9.0	8.1	77
	(Total)	33,395	+2,205	35,600	4,375	1,990	60	6,425	29,175	90	118.9	107.0	1,017
Coarse	(Dom.)	30,550		30,550	2,900	21,154	1,242	25,296	5,254	80	21.4	17.1	168
	(Stocks)		+ 570	570		570		570					
	(Total)	30,550	+ 570	31,120	2,900	21,724	1,242	25,866	5,254	80	21.4	17.1	168
Rice	(Dom.)	1,122		1,122	55	3	10	68	1,054		4.3		42
Sugar	(Dom.)	4,544		4,544			15	15	4,529		18.4		195
	(Stocks)		+ 210	210					210		.9		10
	(Total)	4,544	+ 210	4,754			15	15	4,739		19.3		205
Potatoes	(Dom.)	62,700		62,700	14,550	15,105	1,786	31,441	31,259		127.3		243
Meat	(Total)	9,136		9,136					9,136		37.2		234
Fats	(Dom.)	2,914	b/	2,914			476	476	2,438		9.9		222
	(Stocks)		+ 175	175			25	25	150		.6		14
	(Total)	2,914	+ 175	3,089			501	501	2,588		10.5		236

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TOTAL CALORIES INDICATED ABOVE FROM CURRENT PRODUCTION:	2,044	FROM STOCKS:	101	FROM 1952-53 PRODUCTION:	2,454
TOTAL CALORIES FROM OTHER CURRENT PRODUCTION:	410			FROM STOCKS	101
TOTAL CALORIES FROM 1952-53 PRODUCTION:	2,454			TOTAL	2,555

a/ Represents stocks held at beginning of 1952-53 year over and above pipeline supplies (generally 1 to 2 month's supply, depending on country) and therefore, available for consumption.

b/ Includes 100,000 metric tons of whale oil from catch of Norway in Spring of 1952 assumed available for export.

\* Includes the following countries: Austria, Belgium, Denmark, Finland, France (includes Saar), Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Western Germany (includes West Berlin), Yugoslavia.

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CONTINENTAL WESTERN EUROPE \*  
 Advance estimate of food supplies, consumption year 1953-54  
 (excluding alcoholic beverages)

Population: 247,126,000

Product	SUPPLY		UTILIZATION									
	Production	Trade	Nonfood uses			Food			Supply for Food			
			Total supply:	Seed and waste	Food	Industrial	Total	Total gross	Extr. rate	Per Year Gross	Per Capita NET	Per Day
1,000 metric tons			%			kgs.			Calories			
a/ Wheat and rye (Dom.)	30,056		30,056	3,938	1,791	54	5,783	24,273	90	98.2	88.3	839
b/ Coarse grain (Dom.)	27,495		27,495	4,610	18,513	1,118	22,241	5,254	80	21.2	17.0	167
c/ Rice (Dom.)	1,234		1,234	60	3	11	74	1,160		4.7		46
d/ Sugar (Dom.)	3,635		3,635			12	12	3,623		14.7		156
e/ Potatoes (Dom.)	62,700		62,700	14,550	15,105	1,786	31,441	31,259		126.5		242
f/ Meat (Dom.)	7,271		7,271					7,271		29.4		185
g/ Fats (Dom.)	2,524		2,524			380	380	2,144		8.7		196
TOTAL CALORIES INDICATED ABOVE:			1,831									
CALORIES FROM OTHER PRODUCTION:			410									
TOTAL:			2,241									

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- e/ Assumes 10 percent reduction in production and consumption of food as compared with 1952-53.
  - b/ Assumes 10 percent reduction in production, but no reduction in consumption as human food from 1952-53 as population should use a higher proportion of coarse grains in bread.
  - c/ Assumes 10 percent increase in production - consistent with World War II pattern.
  - d/ Assumes 20 percent reduction in production and consumption as food from 1952-53.
  - e/ Assumes no change in production or consumption pattern.
  - f/ Assumes reduction in meat under 1951-52 production equivalent to the amount estimated as produced from imported food in 1951-52. No reduction based on decreased feeding of domestic grains and potatoes assumed.
  - g/ Reduction in slaughter fat and butter on same basis as meat. Norwegian production of marine oils assumed at World War II low.
- \* Includes the following countries: Austria, Belgium, Denmark, Finland, France (includes Saar), Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Eastern Germany (includes West Berlin), Yugoslavia.



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SECURITY INFORMATION

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ANNEX 4

METALS

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## ANNEX 4

ESTIMATED PRODUCTION AND APPARENT CONSUMPTION OF SELECTED METALS  
CONTINENTAL WESTERN EUROPE AND SOVIET BLOC  
1951, MID-1952 and MID-1954

Unit	1951							Mid-1952			Mid-1954		
	Production a/			Apparent Consump. b/				Production c/			Production c/		
	Continental		Total	Continental		Soviet		Continental		Total	Continental		Total
	Western Europe	Soviet Bloc	Western Europe	Soviet Bloc	Western Europe	Soviet Bloc	Western Europe	Soviet Bloc	Western Europe	Soviet Bloc	Western Europe	Soviet Bloc	Total
Aluminum	Thous. m.t.	330	220	550	300	200	500	365	260	625	465	330	795
Copper	Thous. m.t.	92	272	364	663	300	963	92	278	370	115	325	440
Cobalt	Metric tons	15	950	965	1,300	950	2,250	100	1,000	1,100	900	1,500	2,400
Lead	Thous. m.t.	235	175	410	470	250	720	250	185	435	260	210	470
Molybdenum	metric tons	150	1,450	1,600	2,000	3,100	5,100	150	1,550	1,700	300	1,100	1,400
Nickel	Thous. m.t.	0.5	28.5	29.0	18.0	25.0	43.0	0.8	30.0	30.8	1.0	31.5	32.5
Steel (Crude)	Million m.t.	41	38	79	31	38	69	43.5	41.5	85	45	49	94
Tin	Thous. m.t.	2.0	15.0	17.0	25.0	20.0	45.0	4.4	16.1	18.5	3.7	20.5	24.0
Tungsten	Thous. m.t.	3.7	10.1	13.8	3.7	5.5	9.2	4.8	10.4	15.2	6.3 c/	11.9	18.2
Zinc	Thous. m.t.	300	225	525	480	300	780	310	250	560	340	280	620

a/ All production represents metal content of mine production with the exception of steel and aluminum.

b/ Primary metal except for steel.

c/ Possible maximum annual production which might be achieved.

S-E-C-R-E-T

S-E-C-R-E-T

SECURITY INFORMATION

NIE-40 (ECONOMIC)

ANNEX 5

RUBBER SUPPLY

S-E-C-R-E-T

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ANNEX 5

RUBBER SUPPLY  
(In Thousands of Metric Tons)

	Production Syn- thetic	Re- claimed	Total produc- tion	Inven- tory a/ %	Imports (natural)	Total supply	Avail- able for consump- tion	Surplus or deficit
<u>FY 1953</u>								
CNE	17.1	75.0	92.1	54.1				
Soviet Bloc	257.0	76.0	333.0	286.0	50.0	815.2	600.0	
<b>TOTAL</b>	<b>274.1</b>	<b>151.0</b>	<b>425.1</b>	<b>340.1</b>	<b>50.0</b>	<b>815.2</b>	<b>600.0</b>	<b>+ 215.2</b>
Year-end stocks								215.2
<u>FY 1954</u>								
CNE	36.8	75.0	111.8					
Soviet Bloc	270.0	76.0	346.0	215.2	50.0	723.0	600.0	
<b>TOTAL</b>	<b>306.8</b>	<b>151.0</b>	<b>457.8</b>	<b>215.2</b>	<b>50.0</b>	<b>723.0</b>	<b>600.0</b>	<b>+ 123.0</b>
Year-end stocks								123.0
<b>GRAND TOTAL</b>	<b>580.9</b>	<b>302.0</b>	<b>882.9</b>	<b>340.1</b>	<b>100.0</b>	<b>1,323.0</b>	<b>1,200.0</b>	<b>+ 123.0</b>

a/ Mainly natural rubber.

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SECURITY INFORMATION

25X1



-distributed separately)

NIE-40 (ECONOMIC)

ANNEX 6

AIRCRAFT

S-E-C-R-E-T

**SECRET**