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IRON AND STEEL PLANTS IN EAST CENTRAL EUROPE

A DESCRIPTIVE CATALOGUE

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January 1957

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ALBANIA

ALBANIAN steel plant under construction

at Mamaliaj, about 60 miles E of Vlorë /Valona/,South-Eastern Albania;

referred to as a 'metallurgical combinat', situated on a brown coal mine, and to be connected with Vlorë by a railroad about to be constructed;

expected to produce 5,000 tons steel, described as high-grade, in 1955 /Wirtschaft,1953,November 27/,presumably in an electric furnace; recent information not available.

BULGARIA

/LENIN/ DIMITROVO integrated plant under construction

at Tsrkva near Dimitrovo /former Pernik/, about 15 miles SW of Sofia, Western Bulgaria;

an integrated plant under construction since 1952 near the largest Bulgarian brown coal mine; originally supposed to produce in 1957 226,000 tons of pig iron,250,000 tons of crude steel and 170,000 tons of rolled steel; pig iron target subsequently halved,that for rolled steel increased to 180,000 tons; construction of a coke battery with 100,000 tons annual capacity also envisaged; construction delayed because of non-delivery of equipment and various shortages; all construction according to Soviet blueprints, Soviet equipment installed;

composed 1955 of an ore beneficiating plant allegedly in operation in 1953, three open hearth furnaces built in 1952-55, capacity of furnaces unknown, an oxygen plant allegedly in operation in 1953, two rolling mills for bars and profile steel;

a blast furnace under construction, probable capacity 350 cubic meters, expected to be in operation in 1957; construction of further open hearth furnaces and rolling mills for flat products and wire envisaged or started;

1953 capacity of steelworks described as 50,000 tons, that of rolling mills at 40,000 tons; 1955 estimated output substantially larger, 1956 target for rolling goods estimated at 75-80,000 tons; sales of round and concrete steel diameter up till 70 mm, of profile steel and small rails advertized in 1956.

/STALIN/ DIMITROVO metal and machinery plant

at Dimitrovo,ibidem;

has a low shaft electric furnace for iron smelting, put into operation in 1953; also a steel foundry; ferroalloys made.

CZECHOSLOVAKIA

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Georg Behaghel, Kohle und Eisen in der Tschecho-Slowakei, Breslau, Ost-Europe Institut,1939.

No descriptive data published since 1938, all precise information about existing plants and their facilities withheld since 1948. All estimates of capacity and actual output of single plants of necessity very rough and susceptible of considerable margin of error.

BILA CERKEV steel and rolling plant G. Kliment Ironworks, Hradek

at Hradek near Rokycany, 14 miles E of Plzen, Western Bohemia;

an old plant bought 1919 by Skoda Works Co, composed of two open hearth furnaces at 30 tons,large section and small rolling mills, special high grade steel and steel alloys; steel production discontinued during depression; 1929 output 47,000 tons of rolled products;

after World War II part of the United Steel Works /Kladno/ national enterprise; steel furnaces reactivated, a new wire drawing plant added; 1953 described as producing strip,plates and spring steel;

capacity described as of 230,000 tons of steel per year.

BOHUMIN steel and rolling plants

at Bohumin /P.Bogumin,G.Oderberg/,on the Upper Oder river N of Ostrava,in former Duchy of Teschen; 1938-39 belonging to Poland;

seat of two plants merged in 1948 in the state corporation Bohumin /G.Kliment/ Iron Works:

1. former Hahn Tube Plant, originally a small integrated plant; iron production discontinued during depression; composed in 1938 of open hearth furnaces, universal and sheet rolling mills, tube rolling, iron foundry,own power plant; 1937 steelmaking capacity 150,000 tons, actual output 44,000 tons;

composed of 4 open hearth furnaces /1952/, also electric furnaces; a new tube rolling mill installed after 1948; special steels supplied to Russia;

2. a wire and nail plant,1923 bought by Trinec Works, 1937 output 62,000 tons wire; 1948 a screw factory added, 1950 a new wire drawing mill; output described as twice that of prewar;

estimated steel output about 75,000 tons, rolled goods output not available.

BRNO metallurgical center

at Brno,capital of Moravia;

seat of several large metal-processing and engineering plants,some of which produce and/or roll their own metal:

/GOTTWALD/ FIRST BRNO AND KRALOVOPOLE MACHINERY plant,f.1872, in the interwar period known as ZBROJOVKA /Armament/ plant,greatly enlarged 1919-38, controlled jointly by the state and the Skoda Co; after World War II merged with the machinery and rolling plant at Brno-Kralovopole; makes plant equipment, automobiles and armaments; large plant with 14 affiliated enterprises in Moravia and Slovakia, 1953 - 10,000 employed; has electric furnaces, a rolling mill, and a large iron foundry;

/SMERAL/ UNITED ENGINEERING & FOUNDRIES plant,large iron and steel foundries, in the interwar period had three small open hearth furnaces, 1953- 6,000 employed;

capacities and output not available.

CHOMUTOV metallurgical center

at Chomutov /G.Komotau/, about 30 miles SW of Usti,North-Western Bohemia;

seat of two metallurgical plants:

/FUCIK/ special steels plant, former Petzold & Co, originally a small integrated plant, iron production discontinued, a steel mill built in 1916 by Poldi Co at Kladno; cold rolling,high-grade strip,anti-corrosion steels,transformer sheets and other special steels; greatly expanded by the Germans during World War II; now part of the United Steel Works state corporation at Kladno;

/KLIMENT/ tube rolling plant,f.1890 by Mannesmann Tube Co at Düsseldorf, welded and seamless tubes of all sizes,working mainly for export; much equipment dismantled in 1945 by the Russians and resold to Switzerland; subsequently rebuilt, the main plant of the state tube rolling concenr with seat at Chomutov; three divisions in 1952, 4,000 employed; large tubes 7 to 12 meters long, diameter 100 to 400 mm.

FRYSTAT metallurgical center

at Frystat /P.Frysztat/,about 15 miles E of Ostrava, in Czech Silesia; 1938-39 belonging to Poland;

seat of several small metal plants,among them former Jaekel Iron Works,f.1927, 1928 output about 10,000 tons of seamless tubes of small diameter,also axles and quality steels; dependence of Vitkovice Works;

also a screw and rivet factory,former Blumental,new screw division added in 1952, and a small steel plant,bought by Vitkovice Co, equipment transferred to Vitkovice and steel output discontinued.

/KONEV/ KLADNO integrated plant

at Kladno, 25 miles WNW of Prague, Central Bohemia;

f.1852 on local iron ore, owned by Prague Iron and Steel Co, controlled by Austrian, after 1919 by Czech banks; after 1945 merged with Poldi Steel Works at Kladno; interwar operated conjointly with sister plant at Kraluv Dvur, see below;

composed 1937 of 4 blast furnaces for Bessemer pig iron, capacity from 200 to 350 tons each, output above 300,000 tons; mixer of 450 tons capacity; 5 basic Bessemer converters at 15 tons and 8 open hearth furnaces at 30 tons each; rolling plant including a 1100 mm cogging mill, a reversible 750 mm mill and 8 other rolling mills /universal train, 3 bar rolling mills,wire rolling/ with 14 stands; square and round bars, street car rails,girders, Thomas slag mill; very efficient plant, 1929 output 421,000 tons of pig iron /together with Kraluv Dvur/,433,000 tons of steel and 424,000 tons of rolling goods /also together with Kraluv Dvur/; also electric steel furnaces,alloy and high speed steels,sheets and tinplate,wire,screws;

intact in 1945, largely extended during World War II, increased steel production; large investments and complete modernization after 1948; four blast furnaces dismantled at Kladno and Kraluv Dvur and replaced by three new ones, apparently of the same capacity /deposition by Frejka at Slansky's trial, 1952, replacement regarded as criminal act/ in 1950 and 1951; new steel furnaces and rolling mill added under Five-Year Plan 1949-1953; 1953 output claimed to be twice that of prewar; no data for the postwar period;

estimated ironmaking capacity 660,000 tons, output above 600,000 tons; estimated steel output above 600,000 tons.

KRALUV DVUR integrated plant

at Kraluv Dvur near Beroun,about 20 miles SW of Prague, Central Bohemia;

a very old iron and steel plant, for ownership see Kladno plant, since 1948 an autonomous state corporation;

steel production discontinued in 1922; composed of 3 blast furnaces with capacity of about 200,000 tons per year, working intermittently when demand was high and supplying iron for Kladno steel plant; production discontinued in 1932;an up-to-date sheet rolling mill, 4 trains with 4 housings each,cold rolling mill for automobile bodies, large iron foundry with 25,000 tons capacity,cast piping up to 1200 mm diameter; a cement plant attached;

an ore beneficiating plant built during World War II; iron and steel production resumed, for modernization see Kladno; plant enlarged after war, some of new divisions regarded as key investments /Cerny,Hutnicke Listy,1954,No 1/; erection of agglomerating plant delayed; plant probably to be extended under the second Five-Year Plan because of planned large extension of extraction of Bohemian iron ore;

present capacity and output of metal not available.

/GOTTWALD/ KUNCICE integrated plant under extension

between Kuncice and Vratimov on the eastern bank of the Ostravice river, a few miles S of Ostrava immediately S of the Vitkovice Works;

project of plant conceived by Germany during World War II and known as Südbau; plant also known as Big Ostrava or Nova Hut' plant, also Donbass plant;

the largest metallurgical project of first and second Five-Year Plans, originally expected to be terminated by 1958; original targets 1,000,000 tons of pig iron per year, 1,500,000 tons of crude steel and over 1,000,000 tons of rolled products and castings; construction delayed because of shortage of skilled workers and delays in supply of equipment; cost of plant originally fixed at 300 million dollars, equipment supplied by Skoda Works, First Brno Engineering Works, Engineering Works at Gottwaldov /Zlin/ and other plants, some equipment also supplied by the Soviet Union;

first stage of construction terminated by 1954; plant composed in 1956 of two coke batteries with 144 ovens and facilities for further chemical processing, an ore agglomerating plant, two blast furnaces at 1000 tons daily capacity, at least four open hearth furnaces of 200 tons, a special steel plant, a blooming mill, a very large forge, a 12,000 tons press; hot metal practice used throughout the whole metallurgical cycle; construction of a continuous wide strip rolling mill delayed in 1954;

further extension of plant capacity by 1960 to include two blast furnaces of 1000 tons daily capacity or larger, steelmaking facilities of at least 500,000 tons per year, several rolling mills of large capacity, and the beginning of a continuous sheet rolling mill and cold rolled strip mill; extension similar to that of Nowa Huta plant in Poland, of somewhat lesser capacity;

pig iron output in 1952 estimated at 450,000 tons, in 1955 at about 730,000 tons, steel output in 1953 about 850,000 tons, data for 1955 unavailable.

/STALINGRAD/ LISKOVEC rolling plant

at Liskovec, N suburb of Mistek, in North-Eastern Moravia;

f.1833 by the Habsburg family, known as Karlshütte, later on Karlova Hut', interwar owned by Austrian, subsequently Czechoslovak Mining & Smelting Co, controlled by French Union Européenne et Financière, during World War II operated by Hermann Goering Works;

plant processing steel from Trinec Works, largely extended in 1927-32, prewar capacity 160,000 tons of sheets and plates, especially for automobile industry, also bridges;

after World War II renamed Stalingrad Works, a cold rolling mill added in 1947, a strip mill ordered in the United States, delivery stopped in 1949; alternative equipment supplied by Czech and Soviet plant, electric equipment from Switzerland; consists of three very large sheet and plate rolling mills;

estimated rolling capacity about 300,000 tons per year.

/STALIN/ MARTIN plant

at Martin, former Turciansky Sv.Martin, SE of Zilina, Central Slovakia;

prior to 1938, a tube rolling plant of the Mannesmann Tube Works at Düsseldorf;

after 1945, engineering plant of the CKD /Ceskomoravska-Kolben-Danek/ state concern, boilers,Diesel engines,tanks,large iron foundry,3,000 employed in 1952; tube division assumedly in operation.

MAY FIRST MOST steel plant

at Most /G.Brüx/, about 20 miles SW of Usti, North-Western Bohemia;

a small steel and rolling plant owned by Stahlindustrie Co, prior to World War II, bars, wire drawing, malleable and cast iron for electrical industry;

highly modernized and enlarged during the war, consists of two open hearth furnaces,electric furnaces and rolling mills, praised for high technical efficiency; dependence of United Steel Works at Kladno; capacity and output not available.

MORAVIAN IRON WORKS OLOMOUC

at Olomouc-Repcin, Moravia;

former property of Moravian Steel & Iron Industry Co, now an autonomous state concern, has several dependencies in Moravia;

prior to World War II including several open hearth furnaces,electric furnaces and rolling mills, also wire drawing and foundries;

extended after 1945, capacity of iron foundry 15.000 tons, of steel foundry 3,000 tons; other data not available.

/SVERMA/ PODBREZOVA steel and rolling plant

at Podbrezova /H.Zólyombrezó/ on the Hron river, about 30 miles E of Banská Bystrica, Central Slovakia;

originally an integrated plant owned by Hungarian state, later by Czechoslovak state, 1938 operated by the state conjointly with First Brno Co, 1939-44 by the Slovak state conjointly with Hermann Goering Works, since 1948 the main plant of Sverma Middle Slovak Iron Works state concern;

processing iron from the nearby Tisovec works, composed prior to 1938 of a steel plant, a foundry, structural steel rolling,sheets,boiler plates and a tube plant; also a refractory material plant;

modernized after 1945, a blast furnace ordered in Austria but not delivered, composed of 6 open hearth furnaces at 25 tons and one at 10 tons, a new blooming mill added, sheets,plates and tubes; estimated steelmaking capacity about 150,000 tons;

described as being enlarged in 1952; no data about output available.

POLDI special steel and rolling plant

at Kladno-Ujezd, 15 miles W of Prague,Central Bohemia;

f.1889 as crucible steel and rolling plant,1910 first rustproof steel in the world made on commecrial scale,greatly expanded during World War I,interwar known as Poldina Hut, working mainly for export, also to the United States, interwar ownership controlled by /German/ Becher-Röchling holding concern and Zivnostenska Banka, during World War II by Dresdner Bank;

plant of world renown again greatly expaned during World War II,electric steel plant No 2 added, supplied armor plate and guns; end 1944, 10,000 employed in comparison with 4,000 in 1937; market value of the plant described as 73 million dollars; merged after 1945 with the plants of the Prague Iron & Steel Co at Kladno and elsewhere into the United Steel Works state concern,processing pig iron from the Kladno plant; one of key Czech export plants, subordinated to Czechoslovak Ministry of Defense;

composed in 1938 of a steel plant with several electric furnaces and four rolling mills making bars,billets,strip,sheets and wire; also large foundries and spring factory; wartime-built steel plant No 2 has 7 electric steel furnaces; plant again expanded under Five-Year Plan 1949-53,makes special and alloyed steel of many kinds, plates for ships,submarines and armor, construction steel, tubes for gas pipes in the Soviet Union in rolling plant No 3, automobile, tractor and aircraft parts,also carbide and electrodes, capacity of steel foundry 12,000 tons, of iron foundry 8,000 tons; 25,000 employed in 1953, probably together with the other Kladno plant;

output of steel and rolled goods not available; steelmaking capacity together with the Kladno steel plant nearby described as 800,000 tons per year.

PRAGUE metal plants

at Prague and vicinity;

the seat of a number of large and medium engineering,machinery,electrical machinery,automobile,aircraft and armament plants,some of which may be engaged in producing steel and rolling it, among them

STALINGRAD electrical equipment plant at Praha-Vysocany,the main plant of the CKD /Ceskomoravska-Kolben-Danek/ state concern, electric steel furnaces and small rolling mills for own requirements, had prior to 1938 three acid open hearth furnaces, a forge and a press; 1938 steel foundry capacity 4,000 tons, 1953 capacity 20,000 tons, iron foundry capacity in 1953 30,000 tons; turbines and bridges.

ROTAVA-NEJDEK steel and rolling plants

at Rotava /G.Rothau/ and Nejdek,also spelled Nydek /G.Neudek/, E of As,NW of Karlovy Vary /Karlsbad/ in Northern Bohemia;

old plants, steel production discontinued in the interwar period, rolling mills at Rotava, plate rolling at Nejdek;

after World War II,rolling mills subordinated to Stalingrad sheet rolling plant at Liskovec the equipment of which they supplied in part; there is electric steel output; no recent data available, and some divisions may no longer be active.

/LENIN/ SKODA works, steel and rolling divisions

at Plzen /G.Pilsen/, Western Bohemia;

the largest engineering,machinery and armament group of plants in East Central Europe; f.by Emil Skoda in 1859,incorporated in 1899; greatly expanded as armament plant during World War I; 1919,majority of shares acquired from Vienna banks by Schneider-Creusot armament concern,controlled by Union Européenne et Financiere in Paris; 1924-30 built up into a huge vertical and horizontal concern by absorption of a number of mining,engineering and machinery firms in Czechoslovakia and abroad, expansion helped by loans from British loans; 1930, 25,600 workers employed at the main plant alone;

steel division at Plzen f.1865, consisted 1929 of 6 open hearth basic furnaces with joint capacity of 155 tons, commercial steel made from pig iron supplied by Trinec works or imported; 3 acid Siemens-Martin furnaces of joint capacity of 105 tons,using low phosphorous Swedish and British iron, and 3 electric arc Héroult furnaces of joint capacity of 22 tons for alloyed steels; rolling mills for sections and bars; a steel foundry with 9 furnaces,and a very large forge; 1929 output 77,000 tons basic ingots,19,000 acid ingots,2,600 tons electric steel, 16,000 tons clean castings; new facilities added after 1930;

after Munich agreement in 1938,French-owned shares bought by the state; 1939, main plant and its ramifications included into Hermann Goering concern; very great investments made during World War II; 1944-45 plant repeatedly bombed by Allied aircraft and partly destroyed; damage estimated at 160 million dollars /the main and auxiliary plants/; occupied by American army,April,1945;

after 1945, plant systematically rebuilt and extended,renamed Lenin Works, not subordinated to any industrial ministry, altogether 42 plants affiliated to Lenin Works state concern; heavy industrial equipment and armaments supplied to Soviet Union and other countries of Soviet bloc; 40,000 employed in 1953 at the main plant at Plzen;

4 new open hearth furnaces added to the steel plant by 1953, also a 12,000 tons press, capacity of steel foundry 30,000 tons per year,of iron foundry and forge 40,000 tons; other data not available;

annual capacity of steel plant estimated at 250,000 tons,plus forgings and castings.

SVINOV tube rolling plant

at Svinov /G.Schönbrunn/, W suburb of Ostrava, on the Opava river at its confluence with the Oder river, North-Eastern Moravia;

a tube rolling plant, main Czech works of the Mannesmann Tube Works,Düsseldorf; welded and seamless tubes of all sizes; plant extended after World War II, dependence of Vitkovice Works;

capacity and output data not available.

/SVERMA/ TISOVEC iron works

at Tisovec, ca 40 miles NEE of Zvolen, Central Slovakia;

an old plant originally owned by Hungarian state, interwar and postwar history identical with that of Podbrezova plant;

modernized after 1919, a deficitary works closed in 1932 and reopened in 1937; output about 40,000 tons per year; a new blast furnace blown in 1943, its pig iron processed at the Podbrezova steel plant;

modernized and enlarged again after 1945, a blast furnace described as No 6 added in 1953, four obsolete furnaces presumably dismantled; present capacity and output notavailable.

/MOLOTOV/ TRINEC integrated plant

at Trinec /P.Trzyniec/,on the Olse /P.Olza/ river, about 20 miles SE of Ostrava, in former Teschen Silesia;

f.1770,originally owned by the Habsburg family,1906 bought by Austrian Mining & Smelting Works Co at Vienna; Nov.1918-Jan.1919 hold by the Poles, nearly one half of the shares taken over by Schneider-Creusot French armament concern,see Skoda Works; the rest of the shares controlled by Zivnostenska Banka in Prague; October 1938,taken over by the Poles and operated under Polish management; 1939 seized by the Germans and run until 1945 by Hermann Goering Works; since 1945, principal plant of Molotov Iron Works state enterprise;

completely modernized and greatly extended in the interwar period, became the second largest metallurgical plant in East Central Europe /after Vitkovice/; a completely integrated enterprise comprising iron,steel and rolling works with own coal and iron ore mines,coke plants,power plant and other facilities,as well as auxiliary works in Czechoslovakia and Poland; in constant growth since the beginning of century and highly profitable; entitled to 25 per cent of export of Czechoslovak steel cartel; net profit in 1929, over 1,800,000 dollars;

composed in 1929 of one coke plant at the works and two in the vicinity, 4 blast furnaces of 300 cubic meters and more, one of them of 650 tons daily capacity; steel plant No 1 with 6 open hearth furnaces at 35 tons and a tilting furnace of 75 tons, as well as a mixer of 300 tons, steel plant No 2 composed of 7 open hearth furnaces,joint capacity 189 tons per heat; a blooming mill put into operation in 1906 as the first electrically operated blooming mill in the world, a number of rolling mills for sheets,billets,rails and railroad equipment, structural steel, and merchant iron, a Morgan continuous mill for wire with 8 stands, [redacted] and another Morgan continuous mill for billets and blooms,installed 1928,capacity 1000 tons per shift; a refractory material plant, also iron and steel foundries;

output in 1929: 475,000 tons pig iron, 506,000 tons crude steel,424,000 tons rolled steel, 138,000 tons finished products; steel plant extended after 1929, 1937 output 485,000 tons pig iron,577,000 tons crude steel,477,000 tons of rolled products; capacity of plant in 1938 described /Behaghel,p.171/ as having reached 1500 tons of iron daily, 600 tons pf steel per heat, of wire mills daily 750 tons, total rolling capacity 2,000 tons daily; plant covering all requirements of Czechoslovak railroads and exporting much railroad material; one blast furnace closed but reopened by the Poles; capacity of coke plants extended during the war to 1,260,000 tons,including 600,000 tons of the works' coke plant;

see next page

/TRINEC continued/

plant again modernized and largely extended in 1948-53; coke battery No 6 built in 1948,also a mixer for ores and an ore defreezing plant; blast furnace No 5 blown in 1948,capacity not known,and No 6 in 1952,243 feet high, capacity 750 cubic meters,built by Skoda and Liskovec works,of very high technical efficiency /description in Hutnicke Listy,1952,No 4/; also a large turbo-blower; steel plant No 3 under construction since 1951, at least three large open hearth furnaces put into operation; a strip mill with three divisions ordered in the United Staes, delivery stopped in 1950, replaced by equipment supplied in part by Russia and Switzerland; plant described in 1953 as having i.a. an electric furnace,two blooming mills, large iron and steel foundries and large mechanical divisions; early 1954,described as having 6 blast furnaces in operation and 17 open hearth furnaces;

reconstruction of works in 1951-52 personally supervised by Malyshev,former Soviet minister of ferrous metallurgy; at the Slansky trial,November 1952, according to accused Frejka,great losses were suffered by Trinec works because of a hasty reconstruction of the plant before 1952 and unwarranted demolition of certain facilities; plant behind schedule in 1952, steel plant apparently working well after introduction of Soviet technique;

late 1955,decision to built a new agglomeration plant of 600,000 tons capacity scrapped; old plant of same capacity will be modernized and enlarged instead; blast No 6 to be modernized under Second Five-Year Plan 1956-60;

capacity of iron works in 1953-54 variously described at 2950 cubic meters and 1,200,000 tons per year, that of steel plants at 1,600,000 tons per year,of steel foundry at 25,000 tons and of iron foundries at 47,500 tons;

estimated output in 1955 over 1,000,000 tons of pig iron and about 1,300,000 tons of steel; the largest output in East Central Europe.

/GOTTWALD/ VITKOVICE integrated plant

at Vitkovice /G.Wittkowitz/, a S suburb of Ostrava,on the left bank of the Ostravice river,North-Eastern Moravia;

f.1828 by the Habsburg family, taken over by Rothschild and Guttman /Vienna/ families,built up prior to World War I into the largest iron and steel works in Austria-Hungary and East Central Europe; 1913 output 486,000 tons of pig iron,302,000 tons of rolled products,21,600 tons of tubes,41,000 tons of iron castings; all kind of steel,engineering products,bridges,armor plate,cannon; during World War I, new steelmaking and rolling facilities installed at the cost of 12 million dollars;

in the interwar period,property of Vitkovice Mining & Smelting Co /Rothschild-Guttman, 24 per cent of shares owned by London Rothschilds holding concern,the Allied Insurance Co,which did most of the interwar financing of the plant/; main works renovated,modernized and extended; a completely integrated concern owning coal,iron ore and manganese mines in Czechoslovakia and abroad, a coke plant and power station of Ostrava; plant of remarkable efficiency,capable of competing in world market,and making much profit;

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/VITKOVICE continued/

composed 1929 of a coke plant at Ostrava of 4 batteries and 216 ovens, two iron works, Karolina and Sofia works, 8 blast furnaces, 5 in operation, average daily output of 4 of them 500-600 tons, special blast furnace for Spiegeleisen and ferromanganese average output about 350 tons, two steel plants,obsolecent one dating from prewar and plant No 2 composed of 2 fixed open hearth furnaces at 60 tons each and 6 tilting ones,including one at 110 tons and another at 150 tons,also electric furnaces; 17 rolling mills,including a blooming mill, a rail mill, structural shape mills,various merchant mills,and a plate mill consisting of armor plate mill, reversing duo for heavy plates,trio for light plates, and trio and duo for sheets; a cold rolling mill transferred from Frystat plant; a modern Mannesmann tube plant for seamless and welded tubes, annealing furnaces for high quality sheets, very large steel and iron foundries,various auxiliary divisions,several engineering and machinery works; refracory material plant and power plant; description of plant in 1929 Kriz,pp.153-194;

very high indices of output: maximum output of largest blast furnace 850 tons daily, coke consumption 830 kg per one ton of pig iron, time per heat in fixed furnaces about 6.5 hours, in tilting furnaces from 4,14 to 5.22 hours;

no new investments in facilities 1930-1938, 1937 output 717,000 tons of pig iron, 750,000 tons of steel, 524,000 tons of rolled products, 77,000 tons of tubes, 38,000 tons of iron castings, 90,000 tons of steel castings and forgings; rolling capacity 720,000 tons, tube plant capacity up to 120,000 tons per year;

during World War II plant taken over by GIBET German holding concern; not damaged during the war, plant taken over by the state and named Gottwald Works; in 1949,an agreement signed with British share-owners, £ 8 million compensation to be paid within 10 years;

capacity of works much extended under the Two and Five-Years Plans; two blast furnaces added and two existing remodelled,some old ones apparently dismantled; steel plants extended during the war, a new blooming mill added, cold rolling mill extended, engineering shops extended and a new one added; plate rolling plant reconstructed in 1953; steel plants described as including 4 Talbot furnaces at 250 tons capacity each, plant No 2 as consisting of 10 various furnaces;

prewar capacity of works attained again in 1947, and described as increased by 50 per cent by the end of 1952 when steelmaking capacity exceeded 1,000,000 tons; early in 1952,daily steel production described as 2,200 tons,expected to reach 3,300 tons /Hutnicke Listy,1952,No 4/; 1953 capacity described as 1,090,000 tons of pig iron in 5 blast furnaces /2 blast furnaces at Karolina works with 430,000 tons capacity; 16 rolling mills in 1953, a new tube rolling plant apparently supplied from Eastern Germany with five automatic divisions; welded oil pipe made for Russia, 8 to 12 meters long of 1.6 diameter, 40 mm thick; capacity of steel foundry in 1953 described as 35,000 tons, of iron foundry 50,000 tons per year, a conservative estimate; plate of 3 to 20 cm made; no descriptive data available after 1953;

works criticized for inefficient production, 1952 targets of production not reached except for steel plant No 1; increasing percentage of rejects in 1949-1953,total loss 220 million crowns; bad quality of steel; however, output of heaviest engineering pieces and industrial equipment,largely for Russia and countries of Soviet orbit described as steadily increasins; among largest

see next page

/VITKOVICE continued/

projects realized, bridge on the Danube river at Giurgiu-Ruse and large coke plant at Chorzów,Poland;

production data for 1955 not available; estimated output approaching 1,000,000 tons of pig iron and above 1,000,000 tons of crude steel; 35,000 employed.

ZDAR steel division

at Zdar,ca 45 miles NW of Brno, Moravia;

steel and engineering works of large size under construction since 1950, allegedly to become a counterpart of Skoda Works in Moravia,also to have blast furnaces; original plans probably much curtailed;

high-grade steel made since August 1951, also a foundry for high-grade steel castings, capacity 20,000 tons; 1953 steelmaking capacity assumed to be 50,000 tons.

ADDENDA:

BOHUMIN, plate rolling mills capacity 300 tons daily, plate 2 cm thick.

KUNCICE, to be terminated soon after New Year 1957, a foundry 'largest in Central Europe', castings up to 250 tons, cost 87 million crowns; forge described as largest in Europe.

POLDI, 400 types of steel allegedly produced.

PRAGUE STALINGRAD, 3 high-frequency furnaces supplied from Belgium in 1952.

LIST OF PLANTS WHICH MAY PRODUCE OR ROLL PRIMARY METAL

The above list of Czechoslovak primary iron and steel plants may be incomplete. It is probable that steel is made in electric furnaces in several additional plants,and that there are rolling mills in some other ones, all of a small size and supplying metal for processing within the plant themselves. The list which follows includes most of the enterprises where ferrous metal may be made or rolled,though this can not be sufficiently proven.

25X1

/Dimitrov/ BLANSKO heavy engineering plant W of Brno,Moravia,an old rolling plant of the CKD concern,iron foundry 40,000 tons capacity,electric steel.

Bukovansky rolling mill at CESKE BUDEJOVICE, Southern Bohemia,dependency of Trinec Works, wire rolling and screws.

/Voroshilov/ DUBNICA heavy artillery work, SW of Zilina,Slovakia, a new plant, dependency of Skoda Works,apparently included steel furnaces and rolling mills;

GOTTWALDOV engineering and armament plant at Gottwaldov,former Zlin, E of Brno, Moravia, the extended steel and machinery division of former Bata plant,electric furnaces.

KOPRIVNICE Tatra automobile plant, SW of Ostrava,Moravia, a small rolling mill.

MLADA BOLESLAV Skoda automobile works, NE of Prague,iron foundry with 17,000 tons capacity, a smelting furnace of 60 tons daily capacity blown in 1949.

LIBCICE rolling plant S of Prague,dependency of Kladno Works,screws and rivets, a bright drawn steel wire mill put into commission in 1948.

PRAKOVCE special steel mill in Eastern Slovakia NW of Kosice,known as East Slovak Machinery Plant,during World War II electric and crucible steel furnaces,high speed and special steels,construction steel and plates; now described as steel foundry.

STARA HUT rolling plant SWS of Prague,bars and sheet billets for tinplate,closed during depression,rolling plant in operation in 1948.

TRNAVA rolling plant NE of Bratislava,Slovakia,known as Coburg plant,during World War II tinplate,wire,Mannesmann tubes, now known as KOVOSMALT /metal smelting/.

USTI NAD LABEM rolling plant at Usti on the Elbe /G.Aussig/,Northern Bohemia, assumedly now known as Northern Bohemian Equipment Plant at Sezimovo-Usti, elctric steel,dependency of CKD concern.

VELKY OSEK plant E of Prague,interwar a small rolling mill,electric steel since or after 1945.

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Die Eisen- und Stahlindustrie in der Sowjetzone, SBZ-Archiv,Köln, November 1954.

AUERHAMMER rolling plant

at Aue, SW of Karl-Marx-Stadt /former Chemnitz/, Saxony;

former F.A.Lange Metal Works, composed of three duo mills for sheets and plates, also a small tube plant; 1953 output 28,000 tons of flat products; planned 1955 output 35,000 tons, probably realized.

BAD SALZUNGEN rolling mill

at Bad Salzungen,Western Thuringia;

a small cold rolling mill, production data unavailable.

BRANDENBURG steel and rolling mill

at Brandenburg,on the Havel river and Havel-Elbe canal, about 40 miles WSW of Berlin,province Brandenburg;

in the interwar period the largest steel and rolling plant in the present Soviet zone,favorably situated on waterways and near Berlin and Magdeburg metal-processing centers, owned by Mitteldeutsche Stahlwerke Co /controlled by F.Flick holding concern at Düsseldorf/; 1943 output 590,000 tons of crude steel,large rolling mills, large output of armor plate;

plant completely dismantled in 1945-46 by the Russians,equipment shipped to Russia,most buildings destroyed; rebuilding began early in 1950, original plan to build 12 open hearth furnaces and a correspondigly large rolling plant; construction hasty and defectuous, January 1951 some open hearth furnaces collapsed, had to be rebuilt by Russian engineers; July 1953,further extension of steel plant 'temporarily stopped' and resumed in part only in 1956;

composed in 1955 of 10 Maerz open hearth furnaces at 145 tons, useful surface of each furnace described as 45 square meters, charge described early in 1956 as 60 tons /Ulbricht's speech,March 24,1956/,crude steel supplied to six rolling plants in Eastern Germany; 850 blooming mill, built by Wildau works,put into operation in October 1953, also a wire mill supplied by Skoda Works;

see next page

/BRANDENBURG continued/

construction of planned 1100 reversible blooming mill, a continuous plate mill and other rolling facilities delayed or abandoned in the fall of 1953; however, the plant is supposed to be extended under Second Five-Year Plan 1956-60 /Wirtschaft,1955,No 40/; steel plant No 2 at nearby Hückingen consisting of Maerz 150 tons open hearth furnaces is envisaged, including furnace No 11 under construction,fully basic, 'first in Eastern Germany' /Wirtschaft 1955, No 51/; outside gas will be used in addition to own generators,an oxygen plant will be built supplying 1000 cubic meters per furnace and hour,98 per cent pure; a 25 per cent increase of production anticipated from use of oxygen; plans to extend the rolling plant again shelved in summer 1956; about 2,000 employed;

actual output of steel 562,000 tons in 1953, planned for 1955 - 760,000 tons, actual in 1955 described as one-third of Eastern Germany's total /ibidem/,i.e. about 830,000 tons if all kinds of steel and castings were meant,much less if only Martin steel was meant; probable output in 1955 above 700,000 tons; rolling output 44,000 tons in 1953, planned 230,000 for 1955, not fully realized.

BURG rolling plant

at Burg, NW of Magdeburg,Saxony-Anhalt;

an interwar rolling plant owned by Trierer Walzwerke AG /controlled by Flick concern/;

completely dismantled in 1945, equipment shipped to Russia; two mills returned by the Russians in 1948 and reinstalled in 1951; composed of a sheet mill and a cold reduction mill; makes dynamo sheets of 0.5-1 mm and transformer sheets of 0.35 and 0.5 mm, also ordinary steel sheets of 1 to 3 mm and chrome-nickel sheets; large percentage of rejects; medium plate mill planned for 1954, not realized;

output in 1953 - 32,000 tons of sheets, planned for 1955 - 35,000 tons,probably implemented.

CALBE WEST iron works

at Calbe,on the Saale river, halfway between Magdeburg and Halle; Saxony-Anhalt;

a new plant favorably situated near iron ore and limestone deposits regarded as one of the key constructions of Five-Year Plan 1951-55, processing poor acid iron ores of 17 to 23 Fe content,otherwise unworkable,fine Harz ores and pyrites waste; and metallurgical coke made at the Rakosi Lauchhammer plant out of lignite; the latter plant able to cover Calbe's requirements only since 1956 when its output exceeded 500,000 tons;

originally planned to consist of 20 low shaft furnaces,only 10 were built by 1953; further extension of plant stopped in 1953, no such plans are known for 1956-60; daily output per furnace variously described as 65-70 tons, 80-100 tons and 80-90 tons; 2.05 tons of Lauchhammer coke used per one ton of pig iron; some furnaces being reconstructed in 1956, anticipated output being raised by 35-40,000 tons of iron;

after many setbacks and technical difficulties the plant developed larger capacities than originally anticipated; quality of Lauchhammer coke much improved and plant described as very successful;

see next page

/CALBE continued/

actual production of foundry pig iron 134,000 tons in 1953,planned for 1955 220,000 tons; actual output in 1955 substantially higher, estimated figure 265,000 tons.

MAY EIGHTH
DOHLEN special steel and rolling plant

at Döhlen-Freital, outer SW suburb of Dresden,Saxony;

f.1863, a medium-size steel and rolling plant of the Sächsische Gussstahlwerke Co, controlled by Flick concern; 1943 output 203,000 tons of crude and electric steel;

completely dismantled by the Russians in 1945,with equipment shipped away, and rebuilt since 1949 on the ruins of old plant,originally planned to be developed into a large plant, extension abandoned or slowed down in the fall of 1953;

composed 1955 of two open hearth furnaces at 10 tons, two electric steel furnaces at 10 tons and one at 3.5 tons; construction of 8 electric furances at 10 tons and alternative plan of building two open hearth furnaces abandoned; a steel foundry with one electric oven of 3.5 tons, possibly two with larger capacity; description of steelmaking facilities uncertain; a 450 medium rolling mill built by Skoda Works in 1955; other planned rolling mills not built; a forge with 5 hammers;

1953 output of crude steel 72,000 tons, of electric steel 102,000 tons; planned output in 1955 - 85,000 tons of crude and 130,000 tons of electric steel; data about actual output in 1955 not available.

FARADIT tube plant

at Karl-Marx-Stadt, Saxony /former Chemnitz/;

a small interwar tube and rolling plant, production data not available.

FINOW rolling plant
near Eberswalde
at Finow, NE of Berlin, Brandenburg;

owned interwar by Hoffmann & Metz Co; bar and strip mills; planned extension delayed in 1953 and again in 1956;

1953 output 34,000 tons, planned in 1955 45,000 tons,reduced to 40,000 tons; actual data for 1955 not known.

GRODITZ steel and rolling plant

at Gröditz,Saxony;

f.1780, oldest plant of present Soviet zone, in the interwar period owned by Mitteldeutsche Stahlwerke Co /Flick concern/;

see next page

/GRODITZ continued/

plant dismantled in 1945,equipment shipped to Russia; rebuilt in 1949-54; conflicting information about its facilities; composed of an open hearth shop of 4 furnaces at 60 tons capacity /Steel Developments,p.12/ and a foundry with two open hearth furnaces at 10 tons and two electric furnaces at 20 tons capacity; this description not confirmed by German sources but fitting with the steelworks output in 1953 and planned output in 1955; a blooming mill /Developments,not confirmed/,two rolling mills for railroad equipment /Bandagenwalzwerk/, capacity 75,600 tons per year /Bonn Mitteilungen aus dem Institut für Raumforschung,1951,No 10/described as narrow strip mill /Developments/; also a forge with 6,000 tons press,the largest in Eastern Germany;

output of crude steel 112,000 tons in 1953, planned for 1955 - 225,000 tons, actual output not available; rolled goods output in 1953 - 62,000 tons, planned for 1955 - 75,000 tons,probably attained.

/FLORIN/ HENNIGSDORF steel and rolling plant

at Hennigsdorf, a NW outer suburb of Berlin,Brandenburg;

interwar steel and rolling plant controlled by Flick holding concern,Düsseldorf; built near brown coal mines to take advantage of Berlin's metal scrap and to supply rolled goods to Berlin's electrical industries; rolling plant and most other facilties dismantled by the Russians and shipped away, subsequently some equipment returned from Russia; rebuilt in 1947-53;

composed 1953 of a steel shop with 4 open hearth furnaces at 80 tons and a steel foundry with two open hearth furnaces at 40 tons /one,Steel Developments/, one electric furnace at 10 tons capacity and another at 18 tons capacity, joint capacity 220,000 tons per year; a 750/650 blooming mill with 300,000 tons capacity built in 1948 in Eastern Germany and regarded as defectuous, 4 four light and medium section mills, 350 trio sheets mill and a 280 rod mill, detailed description in Eisenschaffende Industrie,pp.21-22; rolling plant processing own and Brandenburg plant steel; large portion of profile steel used for armament production; a metallurgic research institute attached to the plant whose workers took a leading part in June 17,1953 rebellion;

planned another open hearth furnace in the steel shop and three electric 15 tons furnaces in the foundry,also extension of engineering shops; operation of plant curtailed in October 1955 because of non-arrival of Polish coal;

1953 output of steel 198,000 tons,planned 250,000 tons in 1955,possibly attained; 1953 output of rolled goods 188,000 tons, planned for 1955 - 200,000 tons.

HETTSTEDT rolling plant

at Hettstedt, NW of Halle,in the Harz Mts, Saxony-Anhalt;

a steel rolling division of the interwar copper and brass rolling plant Mansfeld;

plant taken over by the Russians and returned to Eastern German government on January 1,1954; ferrous rolling introduced in 1947; composed of blooming mill, working on ingots from Brandenburg, a plate mill for medium plates and a rod mill;

actual output in 1953 + 173,000 tons,planned for 1955 - 190,000 tons.

/NIEDERKIRCHNER/ ILSENBURG rolling mill

at Ilsenburg SW of Magdeburg, in the Harz Mts, Saxony-Anhalt;

former Copper Works Ilsenburg, not dismantled in 1945, now only a plate and sheet rolling plant, speciality ship and boiler plate, ingots and slabs from Brandenburg plant; also a blooming mill /Developments/; praised for efficiency; earmarked for further extension;

output in 1953 63,000 tons of flat products /more than planned/, expected in 1955 - 77,000 tons.

/BECKER/ KIRCHMOSER rolling plant

at Kirchmöser near Brandenburg, Saxony-Anhalt;

interwar plant owned by German state railroads; two rolling mills shipped to Russia and returned against full payment;

composed of a plate mill and light section mill, also a blooming mill /Developments/; slabs and ingots from Brandenburg plant; works mostly for armaments; praised for efficient operation;

output in 1953 - 108,000 tons, planned for 1955 - 115,000 tons, assumedly realized.

MAXIMILLIAN integrated plant

at Unterwellenborn, on the Saale river N of Saalfeld on the way to Gera, Thuringia;

f.1881, largely obsolescent in the interwar period, property of Eisenhüttenwerk Maximillianhütte Co, controlled by Flick holding concern and Dresdner Bank; 1944 capital 44 million marks; heavy guns and other armaments;

plant not dismantled in 1945 because of its obsolete equipment, but was taken over by the Russians as a Soviet corporation and returned to the Eastern German government on January 1,1954; gun division shipped to Russia; plant modernized and enlarged in 1947-52; working on Schmalkalded iron ore;

composed in 1955 of a sintering plant, Dwight-Lloyd type built by Gruson Magdeburg in 1952; one blast furnace of 285 cubic meters, daily capacity 300 tons, three at 360 cubic meters, 350 tons capacity, and a 40 ton low shaft furnace apparently in operation; Thomas pig iron produced; four Bessemer converters at 15 or 20 tons, apparently to be replaced by 25 tons ones; two electric furnaces at 20 or 25 tons; capacity of iron works 450,000 tons, of Bessemer shop 350,000 tons, of electric shop 60,000 tons; a 1000 tons mixer; a 1100 blooming mill, annual capacity 240,000 tons, a 950 duo heavy section mill, a 700 trio medium section mill and a trio plate mill, being the first part of the planned wide strip mill; a forge and press shop of joint 18,000 tons capacity, modernized in 1952;

regarded as 'mother plant of Eastern German metallurgy' and having many skilled workers, plant can not be extended because of lack of space;

see next page

/MAXIMILLIAN continued/

output in 1953: Thomas pig iron 382,000 tons, Thomas steel 282,000 tons, electric steel 53,000 tons; planned for 1955: pig iron 420,000 tons, steel 330,000 tons, electric steel 60,000 tons; all these figures reached or very nearly so.

OLBERNHAU rolling plant

at Olbernhau, SE of Karl-Marx-Stadt /Chemnitz/, close to Czech frontier, Saxony;

a sheet mill, formerly F.A.Lange Metallwerke AG, three duo mills for fine sheets, allegedly being extended;

output 26,000 tons in 1953, planned 30,000 tons in 1955.

RIESA steel and rolling plant

at Riesa on the Elbe river, NW of Dresden, Saxony;

f.1843, pre-1945 owned by Mitteldeutsche Stahlwerke Co /Flick concern/, 1939 output 382,000 tons of crude steel, 264,000 tons of rolled products, 47,000 tons of tubes, 10,000 tons of containers, 4,190 employed; 1943 output of steel 481,000 tons /together with the associated Gröditz plant nearby/;

plant dismantled in 1945, equipment shipped to Russia, 95 per cent of capacity and 60 per cent of buildings lost; plant carefully and competently rebuilt in 1947-52; first steel produced in 1948;

composed in 1955 of 6 open hearth furnaces at 100 tons capacity, fully mechanized; steel foundry with an open hearth shop of one furnace at 40 tons and two at 60 tons /according to Developments, one at 25 tons and 6 at 60 tons/, one electric steel furnace at 5 tons and another at 10 tons /according to Developments, two/; according to Wirtschaft, 1955, No 40, composed of 9 open hearth furnaces, two electric furnaces and a steel foundry; a rolling plant composed of a 800 reversible blooming mill and another 650, a 500 trio medium section mill, a 360 light section mill, a 280 wire rod mill, a butt welded tube mill, tubes up to 38 mm diameter, supplied from Russia, and two seamless tube mills, tubes 52 to 140 mm diameter; also apparently a 360 sheet mill /may be identical with above light section mill/; armor plate up to 36 mm and profiles up to 300 mm;

no extension planned because of local topographic conditions; plant described as efficient; a school of metallurgy attached to the plant, the only in Eastern Germany; 8,120 employed in 1952, probably together with the Gröditz plant;

output of steel in 1953 - 358,000 tons, planned for 1955 - 380,000 tons; output of rolled goods in 1953 - 252,000 tons, planned for 1955 - 280,000 tons, probably attained; data for tube production not available.

see next page

STALIN iron works

at Stalinstadt,former Fürstenberg-Schliesssee,on the Oder river and Oder-Spree-Berlin canal,across the river from Poland,about 20 miles S of Frankfurt on the Oder,Brandenburg;

plant known as Eisenhüttenkombinat Stalin /EKS/, originally planned as the largest Eastern German integrated plant with full cycle of production, similar to Kuncice,Nowa Huta and Dunapentele projects, though with lesser production of steel; supposed to work on Soviet iron ore and Polish coke; targets as fixed in 1951: 500,000 tons of pig iron,550,000 tons of steel and 990,000 tons of rolled products /including the capacity of blooming mill/; target for pig iron raised in 1952 to 900,000 tons and later on to 1,200,000 tons after complete termination of iron works sometime after 1955; steel target raised in 1952 to 600,000 tons;

the erection of steel and rolling mills indefinitely postponed in the fall of 1953; no indication that any large facilities will be built in the course of the Second Five-Year Plan 1956-60;

plant composed in 1955 of six blast furnaces at 600 cubic meters capacity /Developments: three at 500 meters and three at 700 meters/,No 4 built with help of Soviet engineers, Nos 5 and 6 fully automatic; No 1 defectuous,had to be rebuilt; production behind schedule because of technical difficulties and delays of supply of imported iron ore and coke; in 1955, 70 per cent of coke supplied from Poland, 30 per cent from Western Germany; quality of Polish coke described as bad,and that of Krivoi Rog ore as fines of 45 per cent Fe; the sintering plant has five belts with 1000 tons capacity daily per belt; 1955, one ton of coke used for the output of one ton of pig iron /1953 indice 1,39 tons of coke/;

the capacity of two blast furnaces supposed to be raised in 1957 from 600 to 700 cubic meters;

output of pig iron 658,000 tons in 1953, planned for 1955 - 1,200,000 tons; actual output in 1955 'in the vicinity of' 1,000,000 tons; target for 1956 one ton iron per one cubic meter of capacity, i.e. about 1,250,000-1,300,000 tons /after extension of two blast furnaces/.

/PLECK/
THALE steel and rolling plant

at Thale,SW of Magdeburg,NW of Halle,in the Harz Mts,Saxony-Anhalt;

f.1872, in the interwar period owned by Otto Wolf concern in Cologne, the only major plant in the Soviet zone not controlled by Flick concern; 1943 output 113,000 tons of crude steel;

not dismantled in 1945-6 because of its obsolete equipment, operated until January 1,1954 as a Soviet concern /SAG/,returned to Eastern German authorities; enlarged and modernized in 1949-50;

composed of three open hearth furnaces at 60 tons capacity and at least two electric furnaces at 10 tons; a blooming mill, a plate mill,built in 1912, annual capacity 120,000 tons, two sheet mills with seven trains,annual capacity 78,000 tons, a cold reduction mill, iron foundry of 12,000 tons capacity, steel foundry, stamping and enamel work;

see next page

/THALE continued/

description of rolling mills and their output, Die eisenschaffende Industrie, pp.23-4; no plans known for further extension of plant in 1956-60, which would be difficult because of the location of existing facilities;

output of steel in 1953 172,000 tons /including 41,000 tons of electric steel/, planned for 1955 - 190,000 tons /50,000 tons electric/; of rolled steel 156,000 tons in 1953, planned for 1955 - 220,000 tons; actual data for 1955 not available.

LIST OF PRINCIPAL STEEL FOUNDRIES AND SOME LESSER PLANTS.

The list of Eastern German primary iron and steel plant presented above is not complete. It includes only steel foundries attached to primary metallurgic plants but not those existing at heavy engineering plants and independent steel foundries. It should be borne in mind that a large proportion, possibly one half of Eastern German steel castings /283,000 tons in 1953, 325,000 planned for 1955/ was made in the latter foundries. The list which follows includes most of such steel foundries, as well as a few plants which possessed or were assumed to possess small rolling mills but were not usually included among primary metallurgic plants.

BORNA, former Krautheim steel and iron foundry at Karl-Marx-Stadt /former Chemnitz/, has electric steel casting furnaces; 1951 capacity described as 12,000 tons; until 1954 a Soviet concern.

COPITZ steel foundry near Pirna, Saxony, two oil furnaces at 2 tons.

DRESDEN rod wire mill, planned output in 1955 - 5,000 tons.

FRANKLEBEN rolling plant near Merseburg, S of Halle, Saxony-Anhalt; until 1954 a Soviet concern.

/MUCKENBURG/ LAUCHHAMMER WEST heavy engineering plant at Lauchhammer N of Dresden, Saxony, has electric furnaces, including one at 3.5 tons capacity, ferroalloys plant.

LIPPENDORF, former EULA works, electric machinery plant, enlarged after 1945, makes ferroalloys, esp. ferrosilicium.

LEIPZIG, Saxony, seat of many heavy engineering plants, among which:

Leipzig Iron and Steel Works, former Meier & Weichelt, has a large iron and steel foundry with three open hearth furnaces of 8 to 10 tons capacity and two electric furnaces of 8 and 10 tons; also malleable iron division;

Electrical Steel Casting plant, former Jahn, Leipzig-West, has two electric arc furnaces at 5 tons, capacity about 6,000 tons per year; high-alloyed steel castings.

MAGDEBURG and vicinity, Saxony-Anhalt, is the largest heavy engineering and heavy machinery center of Soviet zone and Soviet-controlled part of Europe; among which:

see next page

/MAGDEBURG continued/

/Thälmann/ heavy machinery plant, former Krupp-Gruson, 1953 steel output 28,000 tons /castings/; 1945-54 a Soviet corporation; has at least one elctric steel furnace at 3 tons; planned output of steel foundry in 1955 - 25,000 tons, of forged and pressed pieces, 35,000 tons; /Dimitroff/ heavy machinery plant, former Otto Gruson, until 1954 a Soviet corporation, planned output of steel foundry 19,000 tons in 1955; /Karl-Marx/ industrial equipment plant, former Scaeffer & Budenberg, special steels, planned output of steel foundry 15,000 tons in 1955.

OBERSPREE cable plant at East Berlin, has rod wire mills; planned output in 1955 - 28,000 tons, actual in 1953 - 23,000 tons.

ORANIENBURG spring-making plant NW of Berlin, Brandenburg, fine steels;

RADEBERG rolling plant NE of Dresden, Saxony, axles;

SILBITZ & RASBERG steel plant, Saxony, former Kunsch & Co, has two or three small open hearth furnaces in steel foundry;

WETTERZEUBE steel works near Zeitz, Saxony-Anhalt; two electrical furnaces at 2 tons;

/RAU/ WILDAU heavy machinery plant at Wildau S of Berlin, Brandenburg, former Schwarzkopff locomotive plant, dismantled in 1945 and rebuilt as the key plant for heavy engineering under the first Five-Year Plan 1951-55, making a.o. metallurgic equipment; has a great forge, planned output 30,000 tons in 1955; also a rolling division.

HUNGARY

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Most data quoted in the above sources are uncertain and contradictory or obsolete. In the description which follows, the writer has benefited by the advice of Dr.George Páll of New York City.

No BORSODNADASD steel and rolling plant

at Nadasd, ca 25 miles W of Miskolc, NE Hungary;

f.1881, owned until 1947 by the Rimamurany-Salgótarján Smelting Co;

originally a tinplate rolling plant, 1928 output 30,000 tons, 1,200 employed; one electric furnace put into commission in 1951; according to Teleki, had in 1947 one small blast furnace and 3 open-hearth furnaces; information not confirmed by other sources.

No CSEPEL steel and rolling plant

at Csepel, an island on the Danube immediately S of Budapest;

former Manfred Weiss Steel and Machinery Works, large engineering and machinery works which in time came to make its own steel; 1943,making crude and rustless steel,bars,sheets,wire,seamless tubes,steel profiles, railroad material,hoops, steel castings and screws, in addition to lorries,tractors,farming machinery, guns,sheels and light tanks; steelmaking capacity in 1943 described at 150,000 tons;

tube plant expanded in 1947-49; 1947 composed of 3 open-hearth and 4 electric furnaces, 1950 /Cordero/ steelmaking capacity 250,000 tons,also a blooming mill, medium,light and tube rolling mills,wire drawing,foundries; one opeh-hearth furnace and one electric furnace added in 1951, also a medium rolling mill and heavy construction mill; a new steel plant under construction in 1953, a new open-hearth in 1953 described as having 180 tons daily capacity,also a new slabbing mill /Vneshnaya Torgovla,Moscow, 1953,No 2/;

estimated steelmaking capacity about 300,000 tons, 1955 output about 250,000 tons; known as Rakosi plant 1948-1956; processes iron from Ozd; supplies steel to Csepel engineering and armament plant,also shipyards; presumably damaged in 1956 revolution.

No
DANUBE Iron Works, former STALIN, integrated plant under construction

at Dunapentele /1951-56 known as Sztalinvaros/, on the western bank of the Danube , 40 miles S of Budapest;

key plant of Hungarian Five-Year Plan 1950-54, initially planned to be erected at Mohács near Yugoslav frontier, construction transferred to Dunapentele in 1950; originally planned to consist of 4 blast furnaces with annual capacity of 1,000,000 tons of pig iron and a steel plant with capacity of 1,300,000 tons; also a coke-chemical plant, vast rolling mills and a number of auxiliary plants; expected to work on Komló coking coal and Soviet iron ore;

construction delayed, only a small part of plan realized by the end of 1956; composed then of one coke battery at 55 ovens, working on mixture of Komlo coal /high percentage of ashes/ and imported coking coals; one blast furnaces at 700 cubic meters capacity /highest daily output 814 tons/, three oil-heated open-hearth furnaces at 125 tons capacity, at least one electric furnace, a refractory brick plant, an oxygen plant, one rolling mills erected in 1952, iron and steel foundries, construction and machinery workshops; equipment largely supplied by the Soviet Union and Czechoslovakia;

end 1955, construction began of a fully automatic cold and hot rolling plant; ore preparation plant expected to be ready in 1956 and second blast furnace in 1957; two more open-hearth furnaces also expected to be built under Second Five-Year Plan 1956-60; works expected then to produce a.o. 280,000 tons of plates, also tinplate and galvanized sheets; all these plans doubtful after 1956 revolution, during which the plant suffered some damage;

estimated 1955 output 175,000 tons of pig iron and about 350,000 tons of crude steel.

No DIÓSGYÖR /LENIN/ integrated plant

at Diósgyör, W suburb of Miskolc, NE Hungary;

a 19th century plant founded by the Hungarian government, operated by MAVAG Co /Royal Hungarian State Iron and Steel and Machinery Works,subsequently Vitez Horthy Istvan Works/;

originally a steel and rolling plant, had one blast furnace blown in 1926 and another one in 1935; output included Martin and electric steel,iron and steel castings,boiler plate,sheets,rails,bars,sleepers,rivets,screws,axles,commercial steel,wheels,bridges and girders,also locomotives,farming machinery,buses and trucks; 1953 capacity 150,000 tons of pig iron and 250,000 tons of construction and tool steels,railroad material, and a large range of engineering and machinery, also guns,shells,light tanks; steel plant regarded as obsolete;

badly damaged during World War II,subsequently completely modernized and much extended; 1947,composed of two blast furnaces, 7 open-hearth furnaces and four electric furnaces, 7,100 employed /Teleki/; 1950, composed of two blast furnaces of 150 cubic meters capacity each and one smaller one /?/, 8 open-hearth furnaces up to 80 tons capacity and 6 electric furnaces, medium,light,universal and spring mills,forge and foundry; three new open-hearth furnaces,one described as of 180 tons capacity,and one or possibly two electric furnaces added in 1951; a blast furnace of 700 cubic meters capacity put into commission in June 1953 and a triple slabbing mill in November 1952 /Bulletin,No 129/;

expected after termination of extension to supply one million tons of steel and a corresponding amount of other products /Bulletin,No 142/; extension stopped in second half of 1953; plant assumedly damaged in 1956 revolution;

data about Diósgyör incomplete and misleading; plant assumedly suffering from shortage of raw materials; pig iron output in 1955 estimated at 340,000 tons, steel output above 500,000 tons.

No GYÖR plant

at Györ, ca 80 miles NWW of Budapest, NW Hungary

owned until 1947 by Hungarian Waggon and Machinery works; railroad material and bridges plant, 1943 also coaches and trucks;

since the war has also an electric steel furnace; a screw factory, coaches plant extended, new press added in 1953; also makes machine tools; named after Pieck.

No OZD integrated plant

ca 30 miles NW of Miskolc,NE Hungary;

f.1881,owned until 1947 by Rimamurany-Salgótarján Co; the oldest Hungarian plant;

1931 composed of 4 blast furnaces working on imported coke, 10 open-hearth furnaces with joint capacity of 360,000 tons, a duo and trio rolling mills,rolling capacity 280,000 tons, 5,000 employed; 1953 ironmaking capacity 300,000 tons, steelmaking capacity 400,000 tons, commercial steel,bars,rails,container and ship plates,girders,bridges;

investments made during Three-Year Plan 1947-49 and plant regarded as reconstructed, capacity of ore preparator plant increased; described in 1950 as composed of 4 blast furnaces, 8 open-hearth furnaces with capacity of 420,000 tons,one electric furnace, a blooming mill,heavy plate rolling mill,medium for rails and sections,light for bars; apparently a new blast furnace added in 1951; 3 modern Open-hearth furnaces mentioned in 1952 /Ferö/; 12 open-hearth furnaces apparently working in 1953;
1947 output 200,000 tons iron and 275,000 tons steel; estimated 1955 production 300,000 tons pig iron and 420,000 tons steel; all data pertaining to the plant uncertain.

PESTSZENTLORINC rolling plant

at Pestszentlorinc, a SE suburb of Budapest;

former Orenstein & Koppel rolling stock plant, has a new rolling mill since 1950.

SALGOTARJAN steel and rolling plant

at Salgótarján, ca 30 miles W of Miskolc, NE Hungary;

f.1881, owned until 1947 by Rimamurany-Salgótarján Smelting Co;

1931, a steel plant, electric ovens,steel foundry,making rivets,axles,drawn wire, farimng tools; 1943, annual steel capacity 50,000 tons, pig iron supplied by sister Ozd plant;

composed of 4 open-hearth furnaces, two electric furnaces /one added in 1951/; also a cold rolling mill,wire drawing mill, forge,iron and steel foundries, galvanizing plant;

1953 estimated output 50,000 tons steel; datum uncertain.

POLAND

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ANDRZEJ rolling plant

at Zawadzkie, on Małopiana river, E of Opole, in Western Upper Silesia;

f.1834 as an iron puddling plant, discontinued after World War I, owned until 1945 by Vereinigte Oberschlesische Hüttenwerke;

devastated in 1945 and rebuilt since, extended under the Six-Year Plan 1950-1955; composed of a large profile mill,a forge and a construction shop, specializes in railroad equipment, apparently also tanka parts; depends on the special steels divsion of the ministry of metallurgy; capacity and output not known.

BAILDON special steels and rolling plant

at Katowice in Eastern Upper Silesia;

f.1815 by John Baildon and known as Baildonhütte,assigned to Poland in 1921, taken over by Pokój state-controlled corporation; during World War II operated by Ballestrem holding co.;

enlarged in the intrewar period,composed in 1938 of two open-hearth furnaces at 25 tons each, 1 electric furnace at 15 tons, 2 at 10 tons and 1 at 2.5 tons, 1 high frequency furnace at 2 tons, 1 at 1 ton,and 1 at 0.3 tons, 1 sheet rolling mill and another at 4 stands, 2 profile mills at 7 stands each,12 hammers,two presses;

greatly damaged during World War II and subsequently rebuilt and enlarged, one new electric arc furnace supplied from Eastern Germany in 1953, produces Martin and elctric,also high-speed steel, sheets,plates,bars,drawn wire; claimed to have been entirely modernized by 1955 and often praised for its performance, produces 'ten types of ferrous products', including forged rollers for cold rolling mills and magnets of powdered metal; targets of Six-Year Plan realized ahead of schedule;

estimated 1955 steel output about 100,000 tons of crude and electric steel; six divisions to be extended under the Second Plan 1956-60 and output raised by 6 to 12 per cent; depends on special steels divsion.

BATORY special steel and rolling plant

at Hajduki Wielkie, S suburb of Chorzów in Eastern Upper Silesia;

f.1872 as Bismarckhütte, assigned in 1921 to Poland, taken over by Pokój state-controlled corporation, during World War II part of Hermann Goering Works;

originally a fully integrated plant, iron smelting discontinued after World War I, composed in 1938 of 3 open-hearth furnaces of joint 80 tons capacity,one electric arc furnace at 10 tons and 3 at 5 tons capacity, heavy,medium and light section mills,heavy and medium plate and sheet mill, six units Mannesmann tube rolling hot welded tubes 400 mm by 30 mm, foundry and forge;

damaged and rebuilt after World War II, being enlarged since 1951, a new open-hearth furnace built in 1951 and some others in 1953; not all of these in operation in 1955; furnace No 2 fully automatic;

assumed steel producing capacity above 100,000 tons per year; plant operated by special steels division; makes among other armor plate of 35 mm, rails, pressed and forged parts; no plans known for the extension of plant in 1956-60.

BOBREK integrated plant

at Bobrek-Karb, an E suburb of Bytom /G.Beuthen/ in Western Upper Silesia;

f.1883 by Caro family and known as Julienhütte, owned since 1926 by Vereinigte Oberschlesische Hüttenwerke, after 1939 by Gewerkschaft Castellenge-Abwehr /Ballestrem holding concern/,since 1945 Polish state works;

plant repeatedly reorganized and modernizedbetween 1910 and 1945; the only iron works left in the interwar period in German Silesia,working on Swedish and German ore and own coke; pig iron output 292,000 tons in 1940 and 236,000 tons in 1944; wartime steel output above 500,000 tons, coke plant capacity 702,000 tons;

the only plant in German Silesia taken over by the Poles intact,except for blooming mill shipped away by the Russians; composed in 1956 of three coke batteries type Kogog and Otto,each at 45 ovens; ore agglomeration plant Greenawalt of 13 units,capacity 240,000 tons /Steel Developments/; two blast furnaces at 400 tons per day capacity and one at 550 tons, another blast furnace not in operation; Martin pig regarded as best in Poland,also foundry iron,Spiegeleisen and ferro-manganese; open hearth shop of 8 furnaces all of which are gradually being altered into Venturi chromo-magnesite model; a blooming mills of apparently 1 million tons capacity, delivered in 1952 by Soviet plants; rolling plant including the first stage of a new bar rolling mill installed in 1954,also a large plate mill; working of steel plants but not other divisions often described as faulty;

annual pig iron capacity 480,000 tons /Steel Devts/,actual output in 1955 not much lower; estimated steel output in 1955 above 700,000 tons;

under new long-range plan, blast furnace C to be reconstructed, output of plates to rise by 1957 by 60,000 tons; other projects not known.

(note: 1955 production of pig iron, 464, 000 tons; of crude steel, 431,000 tons.)

/BIERUT/ CZESTOCHOWA integrated plant under extension

at Raków, S suburb of Częstochowa, N of the coal basin; compsed of two plants;

OLD PLANT: f.1897 by Bernard Hantke,subsequently half-owned by Gleiwitz metallurgists; interwar onwed by Modrzejów-Hantke /Polish/ United Mining & Metallurgical Works Co; seized by Germans in 1939;

composed in 1938 of one blast furnace of 250 tons,another of 100 tons daily capacity not in operation, 2 open hearth furnaces as 60 tons and one at 50 tons, presumed annual capacity 110,000 tons; making commercial steel,rails,sheets and wire; damaged and partly looted during World War II but reconstructed; plant obsolete but described as working very well,esp. the steel plant.

NEW PLANT being built since 1951 next to old one; supposed to produce after termination 1,000,000 tons of crude steel; construction discontinued in 1953 and supposed to take place only after 1960 with exceptions quoted below;

composed 1956 of two coke batteries under construction and an ore agglomeration plant both suppoed to be put into operation early in 1957,two blast furnaces at 862 cubic meters each,built in 1953, steel plant No 2, composed of 6 open hearth furnaces at 75 tons each,built in 1951-52; a roughing mill built in 1951 and a Soviet-made tube rolling mill inaugurated in 1952; working in part on local ores supposed to cover half of its requirements; an ore defriezing plant, a very large ore conveyer a portique 300 meters long; a large power plant under construction;

plan to built steel plant No 3 of 6 open hearth furnaces at 185 tons each, an electric steel plant and a plate mill delayed till after 1960; because of lack of own coke and non-termination by 1956 of ore agglomerating plant regarded as inefficinet and very expensive,heavy annual losses; steel plant defective,demands long repairs, tube rolling plant also working badly;

estimated 1955 pig iron output of old and new plants 430,000 tons /new one 375,000 tons/,capacity much larger; estimated joint steel output about 460,000 tons, new plant being much behind schedule.

/DZIERŻYNSKI/ former HUTA BANKOWA integrated plant

at Dąbrowa Górnicza, NE of Sosnowiec, N of the coal basin;

f.1839 by Bank of /Congress/ Poland,hence the name, had a.o. the first coke blast furnace in Russian Empire; owned until 1939 by French Huta Bankowa Metallurgic Co; sold under duress during World War II to German interests;

composed in 1938 of two blast furnaces at 150 tons,one open hearth furnace at 100 tons and four at 60 tons, a blooming mill,a sheet mill, three profile rolling mills,forge with 4 hammers, iron foundry with 4 copulas; making a.o. rails,plates,sheets,rods,hoops,strip,wire,malleable iron, crucible steel,hot welded pipes; capacity of both iron works and steel plant described as 140,000 tons /Organization/;

damaged during World War II,gradually rebuilt and modernized, blast furnaces obsolete, two new open hearth furnaces inaugurated in 1952, equipment for rolling plant supplied from Italy in 1947; rolling plant expected to be rebuilt before 1955, all interwar lines of production maintained,steel plant still regarded as efficient; renamed after Dzierżyński in 1951;

estimated 1955 pig iron output /with one blast furnace working/ 90,000 tons, steel output 200,000 tons /Steel Developments/, in fact probably higher.

ELBLAG steel plant

at Elblag /G.Elbing/, on the Baltic Sea E of Gdańsk /G.Danzig/;

originally a steel division of F.Schichau Werft, a shipyard which also had iron and steel foundry, also serving Büssing automobile parts work; the two plants employed 25,000 men;

largely destroyed during the siege of 1945 and subsequently stripped of all equipment by the Russians; gradually rebuilt as Gen.Swierczewski Engineering and Turbine plant; classified as metallurgic plant having a steelmaking division; probably includes open hearth furnace or furnaces in its steel foundry; very little known about this plant;

crude steel output in 1948-49 about 50,000 tons /European Steel Trends,1949, p.117/; datum not quite convincing; no recent figures available.

FERRUM [redacted] steel and tube rolling plant

at Katowice, Eastern Upper Silesia;

f.1836, assigned to Poland in 1921, owned by Pokój state-controlled Co; during World War II controlled by Ballestrem holding concern;

enlarged in the interwar period,composed in 1938 of two open hearth furnaces with joint capacity of 54,000 tons of steel, and a tube rolling plant for welded high-pressure tubes of large diameter, a screw and rivet factory;

damaged during World War II,subsequently rebuilt and enlarged, composed 1955 of a steel shop, being modernized, a foundry being reconstructed, a mechanical division, a screw factory and a tube plant making welded tubes above 400 mm in diameter and supplying pipelines to many countries; tube output represents one-fourth of Polish output in tonnage and one half in value /description in Wiadomości Hutnicze,1956,p.26 ff/; also equipment for boilers;

regarded as a very good plant; supposed to increase its output by 25 per cent by 1960; steel furnaces will be deepened;

estimated steel output in 1955 about 55,000 tons.

FLORIAN integrated plant

at Swietochłowice, SW of Chorzów, in Eastern Upper Silesia;

former Bethlen-Falva plant, part of the Bismarckhütte Co, in late interwar period owned by the Community of Interests Polish Co,1938 composed of a coke plant of 173,000 tons annual capacity, two blast furnaces at 150 cubic meters each, one open hearth at 100 tons and five at 60 tons, a blooming mill, a strip, a sheet and a profile rolling mills, a cold rolling mill and a construction shop;

during World War II operated by Krupp's; after war regarded as obsolete and supposed to be dismantled; however rebuilt and modernized in 1948-49 and again later on; one blast furnace enlarged to 250 cubic meters in 1949 /Cordero regards it as a new one/,new open hearth furnaces added in 1953, a new blooimng mill in 1955, new [redacted] rolling mill in 1953; production plans not met in 1951-53,large percentage of rejects;

see next page

/continuation on Florian plant/

composed in 1953 of medium and light section mills, a cold reduction mill, equipment for small seamless tubes, tinning facilities and a foundry /Steel Developments/ in addition to coke plant, blast furnaces and steel shop;

supposed to be rebuilt in 1956-58; 1955 production of pig iron 179,000 tons; of crude steel 314,000 tons.

GLIWICE MAY FIRST steel and rolling plant

at Gliwice /G,Gleiwitz/, on the Klodnicki Canal, in Western Upper Silesia;

a plant arisen out of the amalgamation of three or four interwar plants whose equipment,sepecially rolling mills and forges,have been removed by the Russians in 1945; gradually put again into operation after 1947;

successor to 1. Prussian state foundry, f.1796, originally a small integrated plant /first blast furnace on the European continent working on coke/, 1937 known as Kunstgiesserei of the Prussian State Mining and Metallurgic Co, basic,acid and electric steel castings, ferroalloys,mining machinery; 2. Stahlwerke Gleiwiz and Stadtwerke Gleiwitz,owned by Vereinigte Oberschlesische Hüttenwerke Co, 3 basic open hearth furnaces, a steel foundry with one open hearth furnace, malleable and crucible steel furnaces and four rolling mills; making a.o. iron and steel castings of very large dimensions, motor car frames, railroad equipment and freight cars; 3. Stahlröhrenwerk Gleiwitz-Stadtwald, seamless and welded tubes; 4. Gleiwitzer Draht- und Nägelwerk, all kind of wire,nails,screws,rivets, 1937 a cold rolling mill, during World War II also a rolling and crucible steel plant.

only a part of this joint capacity rebuilt by 1955,compsed of three open hearth furnaces of unknown capacity, some rolling mills, and a large steel foundry; tube plant probably not reactivated; described in 1955 as the best steel plant in Poland, open hearth furnace No 3 record output of steel per one square meter of area in 1955;

outside of May First plant,there is in Gliwice a wire plant and two industrial equipment plants specialized a.o. in metallurgical equipment; building in 1954-55 very large /360 tons capacity/ tilting Siemens-Martin furnaces for the Nowa Huta plant;

steel output unknown, possibly above 200,000 tons in 1955.

JEDNOSC /LAURA/ integrated plant

at Siemianowice,halfway between Chorzów and Sosnowiec,in Eastern Upper Silesia;

f.1835 as Laurahütte,owned by Vereinigte Königshütte & Laura Works,assigned to Poland in 1921,taken over by Community of Interests Polish state-controlled Co;

1938 composed of two obsolete blast furnaces with joint annual capacity of 108,000 tons, one open hearth furnace at 60 tons and another at 40 tons, a section mill, plate and sheet mills,the former with two stands,and two Mannesmann tube rolling units;

no information about its pig iron output,if any after World War II, a new open hearth furnace /or furnaces/ added in 1952-53,also a new tube rolling mill in 1955; plant praised for its performance in 1953 and 1955;

steel output unknown, possibly about 100,000 tons in 1955.

KOSCIUSZKO integrated plant

at Chorzów, Eastern Upper Silesia;

f.1802 as Königshütte, throughout the 19th century the largest iron and steel plant in Silesia, owned by Vereinigte Königs- and Laurahütte Co, assigned to Poland in 1921, since 1935 owned by Community of Interests Polish state-controlled Co;

plant enlarged in the interwar period,Thomas converters closed, a coke plant added in 1932 /annual capacity 243,000 tons/, # blast furnace A built in 1937, capacity 420 cubic meters; name of plant changed to Huta Piłsudski; in 1938 composed of a coke plant, four blast furnaces /three old ones/ with joint capacity of 282,000 tons, seven open heatrh furnaces of joint capacity of 360 tons, a blooming mill,a strip mill,one profile mill with four stands and another with seven stands, a Morgan wire mill with four stands, and a forge with 12 hammers; a large power plant;

during World War II run by Krupp's; after war renamed Kościuszko plant, modernized and extended as one of the key positions of Six-Year Plan,planned ultimately to produce over 650,000 tons of pig iron and of rolled goods,and up to 900,000 tons of steel; extension of plant stopped in 1954 before this capacity was achieved;

composed in 1956 of an ore agglomerating plant /one conveyer/, three coke batteries,built by Czech plant in 1952-54, one blast furnace at 420 tons,rebuilt and enlarged in 1947 and two at 769 cubic meters,built in 1952-53, open hearth shop including two fixed furnaces at 50 tons,one tilting at 160 tons and another at 300 tons /Steel Developments/,using hot metal practice, a blooing mill, a 750 mm heavy section mill, a medium 420 mm mill and a light 310/330 mm mill, and a Morgan mill; also a foundry and a tube division;

praised for its metal production in 1955, ahead of schedule in 1951,1953 and 1955, four heats per day made in one steel furnace; 8000 employed in the spring of 1953; agglomeration plant regarded as insufficient;

pig iron output in 1955 604,000 tons; of crude steel 427,000 tons.

ŁABĘDY /former STALIN/ steel and rolling plant

at Łabędy /G.Laband/,NW of Gliwice,on the Kłodnicki Canal,Western Upper Silesia;

a merger of two plants existing prior to 1945: 1. Herminienhütte,f.1849, in 1938 owned by Vereinigte Oberschlesische Hüttenwerke Co, medium and small profiles rolling mills,cold rolling mill, two thin sheets mills,wire; a heavy 750 mm two-stand mill added in 1938; 2. Werk Laband, a modern steel plant owned by Vereinigte Deutsche Nickelwerke Co, built in the late thirties and doubling as a tank plant;

all rolling equipment dismantled and shipped away by the Russians in 1945,though some of it might have been returned; plant closed until 1947; decision taken in 1948 to rebuild and extend plant as one of key items of Six-Year Plan; a new open hearth furnace built in 1952,another in 1953,apparently at 90 tons capacity; extension stpped in 1954 and apparently no longer envisaged; plant praised for its performance in 1954 and 1955; it has a mechanical division building for ex. a 10 tons matrix hammer for shipyards, rolling mills described as among the best in Poland;

1955 output of steel 360,000 tons, can be raised to 645,000 tons',T.Ludu,Dec.15,1955

MALAPANEW special steel and rolling plant

at Ozimek, E of Opole,on Małopiana river,in Western Upper Silesia;

f.1753 by Frederick the Great, known as Malapane plant,owned by Prussian state;

open hearth shop and rolling mills closed during the depression, prewar production steel castings, electric steel,alloys; some facilities carried away [illegible] by Russians in 1945; monthly rate of production in 1945 2000 tons; open hearth shop resumed operations after the war; May 1954, a new electric steel plant put into operation consisting of 'several' electric steel furnaces,two of which constructed at the plant itself, 1955 a new steel foundry opened; plant subordinated to special steels division of ministry of metallurgy, Soviet advisres present there; apparently a very large number of people employed working on three shifts; there is steel rolling;

steel output in 1955 possibly exceeding 50,000 tons.

NOWA HUTA /LENIN/ integrated plant under extension

at Nowa Huta, E suburb of Cracow,on the Vistula river;

the key plant of Polish Six-Year and Five-Year plans and the largest single plant under construction in Soviet-controlled part of Europe; allegedly entirely planned by Soviet engineers on the modernized model of the Zaporozhe plant; the bulk of equipment and machinery to be supplied by Soviet Union on the basis of trade agreement of 1948; the share of equipment made in Poland greatly increased since 1953;

originally planned to produce 1,000,000 tons of pig iron and 1,500,000 tons of crude steel, subsequently up to 2,000,000 tons of iron and even more steel; plan cut down in 1955 to 1,300,000 tons of iron and 1,600,000 tons of steel by 1960,with prospects of further extension;

construction began in 1949; by the end of 1956,the plant was composed of an ore preparation plant with four conveyers,annual capacity claimed to be 2,700,000 tons of ore; four coke batteries and two under construction,first million tons of coke made by January 1956; two blast furnaces at 1050 cubic meters and No 3 under construction at 1386 cubic meters,the largest in Europe east of the Ruhr; three fixed open hearth furnaces at 185 tons and three tilting ones at 370 tons, No 7 fixed furnace at 370 tons under construction; two electric furnaces; blooming mill with alleged 2,500,000 tons capacity; a continuous hot rolling wide strip mill; a refractory material plant with three divisions; a cement plant to use slag; a very large power plant; iron and steel foundries;

plant supposed to work on a mixture of Gliwice,Rybnik and Wałbrzych coking coals, Krivoi Rog ore and,in the future,of local bog ores specially processed, and scrap from the plant itself,working on fluid metal on full metallurgical cycle; nearly all steel to be used for plate and sheet production;

under construction in 1956,besides already quoted, a cold rolling sheet mill of very large dimensions; planned to be built before 1960, four open hearth furnaces of 185 /two/ and 370 tons /two/ capacity; investment until the end of 1955 estimated at 771 'investments' dollars equal to 15 zlotys each; among further planned facilities are a small profile mill and a draw wire mill; planned capacity of iron foundry 90,000 tons; original official plan of iron output in 1960 raised by plant's manpower council from 1,850,000 tons to 1,980,000 tons,reduced because blast furnace No 4 will be built after 1960;

see next page

/NOWA HUTA continued/

coke output in 1956 about 1,100,000 tons; pig iron output in 1955 about 600,000 tons,expected in 1956-645,000 tons,in 1957-740,000 tons,in 1958,after the blowing of blast furnace No 3- 1,200,000 tons; first million tons of steel made by Jan.1, 1957, probable output in 1955-300,000 tons,in 1956-700,000 tons, expected in 1960-1,800,000 tons; no data for plate output,much of it sold abroad; average productivity of steel furnaces in June 1956 described as 6.81 tons per day and square meter of surface, however high percentage of rejects; cost of pig iron 935 zlotys per ton,the lowest in Poland; plant described as yielding profit since mid-1956; 28,000 employed in July 1956.

OSTROWIEC /NOWOTKO/ integrated plant

at Ostrowiec, about 25 miles SSW of Radom, in Central Poland;

f.1845, owned by Ostrowiec Blast Furnaces and Iron Co /Polish/; during World War II operated by Hermann Goering Works;

composed in 1938 of one blast furnace of 150 tons per day capacity,another not in operation, 6 open hearth furnaces at 60 tons, 3 profile rolling mills, forge with 20 hammers and 4 presses, making railroad equipment,freight cars, a pipe foundry,malleable iron; steelmaking capacity 140,000 tons;

plant looted and dynamited by Germans in 1944; gradually rebuilt,especially steel plant; composed in 1956 of two old blast furnaces and a new blast furnace /possibly reconstructed/ put in operation in September 1954, fully automatic, cubature unknown; a new open hearth furnace added in 1953, a rolling mills in 1947 and another in 1953, a pipe foundry for pipes of 80-300 mm by 3-5 meters; rolling goods include sections,bars,tires,rails; large freight car plant; plant being extended in 1955;

estimated 1955 steel output above 100,000 tons.

POKOJ integrated plant

at Nowy Bytom, halfway between Chorzów and Zabrze,Eastern Upper Silesia;

f.1840 as Friedenshütte, interwar owned by Obesrschlesische Eisenbahnbedarf Co, since 1933 by Pokój Polish state-controlled Co; during World War II operated by Ballestrem holding concern;

in 1938,composed a coke plant with annual capacity of 440,000 tons,two blast furnaces at 350 tons,two at 250 tons and three obsolete and not working at 150 tons, annual capacity 420,000 tons of iron; steel plant with one open hearth furnace at 100 tons and four at 60 tons, a blooming mill,a strip mill,two sheet mills with 15 stands,two profile mills with 8 stands,a cold rolling Sedzimir mill, a forge with 8 hammers, a machinery shop;

plant reconstructed and modernized since the war, one coke battery dismantled and old steel plant about to be dismantled because of obsolescence; a new blast furnace added /or old reconstructed/ in 1953, a new open hearth furnace added in 1953, large plate mill put into operation in 1954,representing 23 per cent of the then Polish capacity; a new 'giant' rolling mill under construction in 1956; one electric furnace; 6 blast furnaces in operation in 1953 /Steel Developments/ with joint capacity of 1110 tons daily and 425,000 tons annually;

pig iron output in 1955 - 424,000 tons; of crude steel 429,000 tons.

SILESIA rolling plant

at Paruszowice, N of Rybnik, Eastern Upper Silesia;

f.1898, assigned to Poland in 1921, since 1935 owned by Pokój Polish state-controlled Co, during World War II by Ballestrem holding concern;

a fine sheet rolling mill with 5 stands, very badly damaged during the war and rebuilt afterwards, new divisions apparently added, covers much Polish demand for tinplate, production data unavailable.

SOSNOWIEC metallurgical center

at Sosnowiec, E of Katowice, and vicinity;

a group of small iron, steel and rolling plants dating from the 19th century and largely obsolete by 1939, which suffered much damage during World War II and have been partially enlarged, renamed and merged since 1945 with their prewar identity confused;

they are: 1. BUCZEK, former KATARZYNA integrated plant, f.1881, interwar owned by Modrzejów-Hantke Co, 1938 composed of two blast furnaces not in operation, two open hearth furnaces, one sheet mill of 4 stands, welded tubes division and an iron foundry; 1953 composition described as one blast furnace of 120 tons per day capacity, open hearth shop with 60,000 tons of steel capacity, sheet mill with 20,000 tons capacity and tube capacity of 7,000 tons /Steel Developments/; also screw factory and mechanical division; plant seems to be operated jointly with the Sosnowiec plant, see below;

2. CEDLER, former RENARD rolling mill, old plant interwar owned by French Huta Bankowa Co, wire rod and wire products, forge and press;

3. MILOWICE rolling mill, f.1883, originally a small integrated works, interwar owned by Modrzejów-Hantke Co, in 1938 composed of three profile mills, a forge with 6 hammers, a screw and hook factory; rolling mills may no longer be in operation; described as a forge and pressing department /Steel Developments/; possibly identical with Forged Products Works at Milowice;

4. SOSNOWIEC steel and rolling plant, f.1881, interwar owned by French Sosnowiec Co of Tube and Iron Works, in 1938 composed of two electric furnaces, one sheet mill; main output seamless Wellman tubes; described in 1953 as composed of an open hearth shop /not in operation in 1938/, roughing mills, seamless and butt welded tubes, cold drawing plant and malleable iron foundry /Steel Developments/; a new tube rolling mill added in 1955, also makes cold drawn tubes; regarded as an efficient plant, apparently operated in merger with the Buczek-Katarzyna plant nearby;

5. STASZIC, former PUSZKIN rolling mill, wire drawing;

iron and steel output figures not available, can not be large.

STALOWA WOLA special steel and rolling plant

at Stalowa Wola, on the San river, about 30 miles N of Rzeszów, province of Rzeszów;

built in 1937-39 by the Polish government, most construction done by German firms; regarded as the most efficient plant in Poland;

see next page

* /Stalowa Wola continued/

1939 composed of two open hearth furnaces at 30 tons,heated on natural gas, two electric arc furnaces at 15 tons and three high frequency electric furnaces at 0.3, 1 and 2 tons respectively, total capacity 84,000 tons annually /Organization/; a small blooming mill, one sheet mill with two stands,three profile rolling mills with 16 stands, a forge with 10 hammers,four presses up to 2500 tons; cold drawn rods,springs, gun division;

during World War II operated by Stahlwerk Braunschweig, 1941 production at the annual rate of 54,000 tons steel and 72,000 tons rolled steel; partly looted in 1944 by Germans; production resumed after war,5200 employed in 1947;

much extended during Six-Year Plan,large power plant added, plant subordinated to special steels division of ministry of metallurgy, gunmaking facilities assumedly much enlarged; existence of blast furnace /Steel Developments/ not confirmed;

no data about steel available, output may approach 150,000 tons annually.

STARACHOWICE integrated plant

at Starachowice, about 20 miles S of Radom,in Central Poland;

iron works in intermittent existence for several hundred years, interwar owned by Starachowice Mining Co, partly controlled by Polish government; during World War II seized by Hermann Goering Works;

1938 composed of one blast furnace of 150 tons daily capacity,two open hearth furnaces at 30 tons, two arc electric furnaces at 5 tons and one high-frequency furnace at 0.5 tons; annual steelmaking capacity 72,000 tons; three profile mills, cold drawn rods, a forge with 5 hammers, a 2000 tons press, own small fireproof bricks plant; making special steels, iron and steel castings,construction steel,boilers,arms and ammunition; during was making gun shells and armor plates;

new facilities from France and Belgium supplied by Germans during the war,but plant heavily damaged as their withdrawal;plant modernized and much enlarged under the Six-Year Plan, a new /or reconstructed/ blast furnace blown in 1951; only metallurgical Polish plant administered by Ministry of Defense; details of enlargement not available; much metal processed in automobile division of the plant manufacturing Star trucks; probable large output of ammunition;

iron and steel output not available, may be in the vicinity of 100,000 tons.

SZCZECIN iron works

at Stołczyn, N suburb of Szczecin /G.Stettin/,on the Oder river;

f. 1898 by Count von Donnersmarck,known as Eisenwerk Kraft at Kratzwieck-Stolzenhagen,interwar owned by Hochofenwerk Lübeck Co,1940 taken over by Mitteldeutsche Stahlwerke Co;

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* a 30-ton electric arc furnace, anticipated annual output 28,000 tons, entirely Polish built, put into operation in April 1957.

/Szczecin continued/

originally consisting of three blast furnaces at 150 tons daily capacity and a coke plant of 130 ovens; working on Swedish iron ore and British coal; foundry iron made;

nearly completely destroyed during the siege of Stettin in 1945 and looted of all equipment by the Russians; one blast furnace restored in 1947 and enlarged to 180 tons capacity,another in 1949 to the capacity of 250 tons; coke plant, prewar capacity 400,000 tons, rebuilt in 1948; a blast furnace rebuilt in 1954 with capacity increased by 13 per cent; plant has an agglomeration plant;

capacity of works in 1953 described as 155,000 tons per year /Steel Developments/. output in 1953 given as about 90,000 tons, in 1955 presumably much higher.

WARSZAWA special steel and rolling plant under construction

at Młociny, N suburb of Warsaw,on the left bank of the Vistula;

under construction since 1952,delayed a.o. because of the marshy site; expected to supply by 1958 180,000 tons of crude steel and 120,000 tons of electric steel; to consist of three open hearth furnaces at 75 tons each /for special steels/, two electric furnaces at 45 tons each, a blooming mill, heavy and medium profile mills, pressing and drawing divisions, and a steel foundry;

one electric furnace to be put into operation early in 1957, and the remaining furnaces and blooming mill by 1958, other facilities in 1959-61; when terminated,plant supposed to employ 8300 people.

ZAWIERCIE integrated plant

at Zawiercie, 20 miles S of Czestochowa, N of the coal basin;

f.1902 by Huldschinsky & Sons Co, interwar owned by French Sosnowiec Tubes & Iron Co;

in 1938,composed of one blast furnace of 55,000 tons annual capacity, 4 open hearth furnaces at 30 tons each, a blooming mill, 3 profile mills, a small electric furnace, and a steel construction shop; 1943 output 65,000 tons of steel;

partly destroyed in 1945, restored and modernized since, a new rolling mill added in 1953; plant praised for its performance in 1952 and 1953; one open hearth furnace enlarged by 10 tons capacity,other expected to be enlarged in 1956;

estimated iron output in 1955- 50,000 tons, steel output about 100,000 tons.

ZYGMUNT steel and rolling plant

at Łagiewniki Górne, between Bytom and Chorzów, in Eastern Upper Silesia;

obsolete plant formed of the merger of former Hubertushütte and Martahütte, owned by Kattowitzer Mining & Smelting Co; interwar property of Community of Interests Polish Co;

see next page

/Zygmunt continued/

originally a small integrated plant, blast furnaces closed in 1929; in 1938, 3 open hearth furnaces in operation at 25 tons each, a foundry, a boiler forge and a construction shop; at Marta division, a small steel and rolling plant;

rebuilt after 1945, an open hearth furnace built or rebuilt in 1948; obsolete coke plant of 260,000 tons capacity was reconstructed in 1952-53;

steel output unknown, probably very small.

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BRAILA steel and rolling plants

at Braila on the Danube, S of Galati, in Moldavia;

two prewar plants:

1. former Goldenberg works, f.1929, bar rolling mill with capacity of 25,000 tons in 1934, subsequently enlarged, and
2. former Industria Sarmei plant, now PROGRESUL, prewar capacity mf 30,000 tons of bars and wire; open hearth and electric steel made since 1951;

steelmaking capacity and output unavailable.

BRASOV metallurgical plants

at Brasov /G.Kronstadt, H.Brassó, also known as Orasul Stalin/, in SE Transylvania;

seat of several large metal-processing plants some of which also make their own steel:

1. ASTRO-VAGOANE rolling stock and armament plant; has its own open hearth furnaces working on natural gas /one completed in 1947/;
2. SOVROMTRACTOR plant, has electric steel furnaces, forge and foundry;
3. STEAGUL ROSU ball-bearing plant has an open hearth furnace since 1950, also making special steels;

estimated capacity of three plants above 50,000 tons of crude and electric steel, output not available.

BUCHAREST metallurgical plants

at Bucharest and vicinity, seat of several large metal-processing plants, some of which make and roll their own steel:

1. AUGUST 23 plant, f.1928 as Malaxa Locomotive and Machinery Works, operated during World War II by ROGIFER Rumanian-German Co; has since 1936 a steel and rolling division; 1939, composed of two open hearth furnaces at 25 tons and several electric furnaces, 1944 capacity 65,000 tons of steel, a new open hearth furnace added in 1950, some of furnaces heated on natural gas; estimated steelmaking capacity above 100,000 tons annually, output not available;

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/BUCHAREST continued/

2. INDUSTRIA DE FIER steel rolling plant, 1939 capacity 10,000 tons;
3. REPUBLICA tube plant, formerly a division of Malaxa works, now much extended and operated separately; a large plant;
4. VULCAN steel rolling plant, f.1936, rebuilt and extended since 1939, has an electric steel furnace since 1951.

CALAN VICTORIA iron works

at Calan, E of Hunedoara, in Transylvania;

f.1871, originally a small integrated plant, closed in 1918, reactivated in 1934, owned interwar by Titan-Nadrag-Calan Co, in 1938 composed of a blast furnace of 100 tons daily capacity working on charcoal, one of the largest in the world; blast furnace No 2 added in 1951, working on coke; joint capacity in 1952 described as 70,000 tons; a grey-iron foundry and an enamel work; output of iron not available.

CAMPIA TURZII steel and rolling plant

at Campia Turzii, SE of Cluj in Transylvania;

originally owned by Industria Sarmei Co; has an open hearth furnace since 1951, a rolling aggregate built in 1950; special steels and wire.

FERDINAND steel and rolling plant

at Severin, in Banat;

an old plant owned interwar by Titan-Nadrag-Calan Co, enlarged interwar, composed in 1939 of 4 open hearth furnaces, capacity 100,000 tons /1938 output 70,000 tons of steel/, one bar rolling mill, one profile mill, and one sheet rolling mill; also one Herault electric arc furnace; conflicting official information about capacity and output of rolling mills, the latter allegedly being 103,000 tons; 1944, also iron and steel foundry, drawn wire made;

1948 capacity described as 70,000 tons of steel; no further data available; recent output of steel not available.

HUNEDOARA /GHEORGHIU-DEJ/ integrated plant
/H.Vajda-Hunyad/

a t Hunedoara, halfway between Timisoara and Sibiu, in Transylvania, on the Mures river;

f.1882 by the Hungarian state on the site of an old iron works, operated since 1919 by RIMMA Co /Mining and Metallurgic State Enterprises in Transylvania/;

originally an iron works supplying metal to Hungarian steel plants and iron foundry for cast iron pipes; in interwar period steel furnaces and rolling plant added; in 1943 composed of three blast furnaces working on charcoal and two working on coke, all regarded as obsolete; annual ironmaking capacity 155,000

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/HUNEDOARA continued/

tons,maximum output 110,000 tons of iron; four open hearth furnaces at 25 tons and one electric furnace, alleged steelmaking capacity 105,000 tons /?/; rolling mills for bars and commercial iron,alleged capacity 150,000 tons per year; iron casting capacity 12,000 tons;

reconstruction and enlargement of plant provided in Five-Year Plan 1951-55; a blast furnace blown in in 1952, annual capacity 45,000 tons of iron, another of larger capacity in 1955, and still another in 1956, assumedly of 650 cubic meters capacity ,annual capacity 200,000 tons; two open hearth furnaces enlarged, another added in 1950, still another 'of very large capacity' blown in 1952; 3 electric furnaces added in 1951; an ore beneficiating plant put into operation in 1952; one coke battery opned under Five-Year Plan, another under construction in 1956, planned joint capacity 600,000 tons /1955 planned output 160,000 tons/; two rolling mills put into operation in 1950;

plant constantly suffering from insufficient supply of fuel,ores and electic power,and working much below its capacity; its further enlargement planned under the second Five-Year Plan 1956-60;

roughly estimated pig iron production in 1955 above 300,000 tons, much more in 1956; steel output in 1955 estimated at above 300,000 tons.

MAY FIRST steel plant

at Ploesti,45 miles N of Bucharest;

former Concordia plant,f.1936, electric steel plant,composed of 2 Heroult arc furnaces at 3 and 0.5 tons; also an iron foundry; postwar developments not available.

NADRAG rolling plant

at Gavojdia, near Severin, in Banat;

f.1850,originally a small iron and rolling plant owned by a Hungarian firm; interwar owned by Titan-Nadrag-Calan Rumanian Co; iron output discontinued, 1939 composed of two small sheet rolling mills,capacity 15,000 tons per year; also tinplate goods; postwar data unavailable.

RESITA /LENIN/ integrated plant

at Resita /H.Resicza/, about 50 miles SE of Timisoara, in Banat;

plant existing since 1718, iron made on coke since 1846,steel since 1868; prior to 1919 owned by Austro-Hungarian railroads, property changed hands several times during the interwar period,1941 taken over by Hermann Goering Works,1945 seized by the Russians and until 1955 operated by SOVROMMETAL Soviet-Rumanian mixed Co; 1955 returned to the Rumanian state;

early vertical concern including all stages of metal production and processing; much enlarged and modernized since 1919; in 1939 composed of a coke plant built in 1934,capacity 80,000 tons,two blast furnaces with joint capacity of 100,000

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ton,6 open hearth furnaces and two arc electric furnaces at 6 and 2 tons,joint capacity 260,000 tons, 7 rolling mills including a reversible blooming mill, plate,sheet and universal rolling mills, joint capacity 260,000 tons, a refractory material plant,iron and steel foundries, 16,000 employed in 1938; also a locomotive plant, railroad material,electrical machinery and armaments;

1950 output 110,000 tons of coke and 242,000 tons of steel crude and electric; a 23-oven battery added in 1949, prewar blast furnaces reconstructed and enlarged, two new ones built, some old open hearth furnaces modernized, three new ones built by 1952; new electric power plant built in 1951; since 1953 extension of plant discontinued;

in interwar and postwar periods plant operating below its capacity because of shortage of iron ore since the rupture with Yugoslavia and of coking coal,as well as power;estimated ironmaking capacity above 300,000 tons per year,steelmaking capacity about 400,000 tons; actual output unavailable,may have reached by 1955 about 225,000 tons of pig iorn and about 300,000 tons of steel.

ROMAN integrated plant under construction

at or in the vicinity of Roman, SE of Iasi, on the Siretul river in Moldavia;

a completely integrated plant to be built /first stage/ by 1960, presumably to work entirely on Soviet coke and iron ore, to include a blast furnace of 650 cubic meters, a steel plant of 700,000 tons annual capacity, a blooming mill and a tube rolling mill for tubes of 400 mm diameter of 300,000 tons annual capacity /Prime Minister Chivu Stoica, December 28,1955/;

construction of tube rolling mill intermittently going on since 1952.

TITAN rolling mill

at Galati,on Lower Danube, in Moldavia;

small plant interwar owned by Titan-Nadrag-Calan Co; 1939, two sheet rolling mills,capacity up to 25,000 tons per year; also wire drawing; postwar data unavailable.

VLAHITA iron works

at Vlahita N of Brasov, in Eastern Transylvania;

very old iron plant, two blast furnaces working on charcoal, joint capacity 7,000 tons; 1941-45 assigned to Hungary and known as Szentkereszbanya plant; blast No 3, presumably also working on charcoal,added in 1950; high grade iron of some specialized applications; output data unavailable.

YUGOSLAVIA

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ILIJAS iron works under construction

at Ilijas, N suburb of Serajevo, Bosnia;

expected to consist of three electric furnaces for iron smelting with joint annual capacity of 81,000 tons, to be supplied by Norway and Sweden; also three casting divisions;

one electric furnace of 27,000 tons capacity in operation; cast iron pipes up to 700 mm diameter made since 1954, capacity 16,500 tons per year; water pipes exported to Asia.

JESENICE integrated plant

at Jesenice /G.Assling/, on the Sava river about 35 miles NW of Ljubljana, near the Austrian frontier in North-Western Slovenia;

f.1869, owned by Industrial Co of Carniola /Kraina/, the main plant of a concern owning iron works at Trieste and iron ore mines in Austria, divided in 1919; taken over by a Yugoslav consortium, 1937 composed of 4 open hearth furnaces at 35 tons each, 4 rolling mills for strip, rails, bars and wire, and a fireproof material plant, 2,850 employed; 1937-41, two blast furnaces, another open hearth furnace and rolling mills of large capacity added; 1939 output 51,000 tons of pig iron, 125,000 tons of crude steel and 85,400 tons of rolled goods; best plant in Yugoslavia;

plant extended and modernized after World War II: capacity of blast furnaces allegedly doubled, open hearth furnace No 6 built in 1952, No 7 under construction; two electric furnaces built with joint capacity of 9 tons of steel per heat; plant now includes four profile mills with extended capacity, a plate mill and a sheet rolling mill, all situated at the nearby auxiliary plant at Javornik /G.Jauerburg/, and a drwn wire mill at the Jasenice plant proper; also a cold rolling mill, forges and steel foundry; an oxygen plant built in 1952;

plans called by 1955 for pig iron output of 125,000 tons, termination of open hearth furnace No 7 and crude steel output of 234,000 tons, plus 9,000 tons of electric steel, also modernization of strip and wire rolling mills and total output of 183,000 tons of rolled goods; plant to specialize in the production of medium sheets and heavy plates; about 16 million dollars spent on the reconstruction of the plant since 1945;

7,000 tons welded tubes made in 1955, 10,000 tons in 1956; assumed pig iron output about 100,000 tons in 1955, steel output about 200,000 tons in 1956.

/KIDRIC/ NIKSIC steel and rolling plant under construction

at Niksic, about 30 miles NE of Titograd /former Podgorica/, Montenegro;

plant under construction originally planned be terminated in 1958 and to produce 80,000 tons of steel in open hearth furnaces,57,000 tons of special steels made in three electric furnaces supplied by Sweden,48,000 tons of profile steel, 15,000 tons of thin sheets,15,000 tons of drawn steel and 4,000 tons of steel castings; iron to be supplied by the Zenica works;

in operation late 1956 one open hearth furnace,capacity 27,000 tons and one electric furnace,capacity 10,000 tons; also a thin sheet mill,capacity 30,000 tons and a heavy profile mill,capacity 10,000 tons; supposed to be in operation in 1957, a cold rolling mill,capacity 15,000 tons.

RAVNE special steel and rolling plant

at Ravne near Gustanj /G.Gutenstein/ on the Drava river,about 45 miles NE of Ljubljana,Northern Slovenia;

f.1774,owned by Counts von Thurn,Vienna; 1937 composed of a small double open hearth furnace,crucible and temper ovens, a rolling plant with three small mills,joint daily capacity 160 tons, a foundry,a forge with 17 hammers, a press of 600 tons; 1939 output 8,000 tons of high-grade steel,5,350 tons of rolled steel; nearly all output exported;

after World War II modernized and extended; two small Bessemer converters added, also another open hearth furnace and one electric furnace of 4 tons; another electric steel furnace added in 1955,largest in Yugoslavia,capacity 20,000 tons; interwar equipment of other divisions replaced by modern one;

plans call for the extension of capacity to 45,000 tons steel,half Martin and hald electric, 12,500 tons of rolled steel and 5,000 tons of steel castings; chrome,vanadium,molybdenum and chrome-nickel steels to be produced like in the past;

actual output in 1955-56 not available.

SISAK integrated plant under extension

at Caprag near Sisak on the Sava river, about 35 miles SE of Zagreb,Croatia;

plant consisting prior to World War II of a small blast furnace working on charcoal, 65 tons daily capacity, put into operation in 1939, and two small rolling mills working on purchased steel;

being extended into a fully integrated plant, consisted in early 1956 of an ore agglomerating plant, the prewar blast furnace possibly not in operation, two postwar blast furnaces at 150 tons capacity each,two oil-heated open hearth furnaces at 65 tons each,built in 1954; a seamless tube plant,built in 1954 by a Milan firm with the help of a loan from International Bank in Washington /4,360,000 dollars/; iron foundry,capacity 5,000 tons,with an electric furnace of 1.5 tons,also a small steel foundry; 22 million dollars spent upon the extension of the plant by the end of 1954;

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/SISAK continued/

plans call for the extension of ironmaking capacity to 200,000 tons and of steelmaking capacity to 220,000 tons, also annual production of 62,800 tons of tubes /target for 1957 - 40,000 tons/ and extension of iron foundry to 20,000 tons capacity; erection of coke plant with 400,000 tons capacity envisaged;

capacity of plant only partly used because of shortages of raw materials and power; 1955 production 28,000 tons of tubes,4,500 tons of iron castings and 250 tons of steel castings; expected gross output of entire plant 20,500,000 dollars; expected export of tubes in 1956 - 22,000 tons,mainly to India;

estimated output of pig iron in 1956 about 100,000 tons, of crude steel about 120,000 tons.

SMEDEREVO steel and rolling plant

at Smederevo,on the Danube river,about 25 miles SE of Belgrade, North-Eastern Serbia;

originally a metal-processing plant owned by Sartid Co, after 1933 extended by a metalmaking and rolling division; composed of a small open hearth furnace and a small rolling mill; 1939 output, 16,000 tons of crude steel,12,700 tons of rolled goods,2,200 employed; plate,construction steel,axles,nails,tools;

after World War II, an electric steel furnace built with capacity of 2,500 tons per year,also a small sheet rolling mill,capacity 4,000 tons,built in 1953; extension plans call for erection of another open hearth furnace and extension of steelmaking capacity to 47,000 tons, including 3,000 tons of electric steel,and of rolling capacity to 30,000 tons;

assumed 1956 output of steel about 20,000 tons; sheets exported.

STORE integrated plant under extension

at Store,ca 5 miles E of Celje, Slovenia;

f.1881 by Viennese capital,composed in 1939 of one open hearth furnace of 20 tons capacity, annual capacity 20,000 tons,processing pig iron from two charcoal ironworks no longer active /Beslinac and Topusko/, three small rolling mills, also an iron foundry; 1939 output 8,000 tons steel,5,600 tons rolled products; an efficient plant;

another open hearth furnace put into commission after World War II, capacity of open hearth shop allegedly increased to 24,000 tons; an electric furnace for ironmaking put into operation in 1955; capacity of rolling mills is to be increased to 30,000 tons in three divisions, and the foundry's capacity to 18,000 tons;

actual data of output not available.

ZENICA-VARES integrated plant

at Zenica, about 30 miles NW of Sarajevo, and Vares, about 25 miles NW of Sarajevo,Bosnia;

f.1891 /Vares iron works/ and 1892 /Zenica steel and rolling plant/ by Viennese capital; after several changes of ownership taken over in 1937 by Jugocelik /Yugosteel/ state iron and steel concern; 1941-45 operated by Croatian Iron and Steel Co; main Yugoslav metallurgic center under extension in the proximity of iron ore, non-coking coal and limestone deposits;

prior to 1936 composed at Vares of two obsolete blast furnaces,annual capacity 60,000 tons, an iron foundry,a steel foundry with a small electric oven and an obsolete tube plant not in operation; at Zenica,of 3 open hearth furnaces,joint capacity about 50 tons per heat,and four obsolescent rolling mills; extended 1936-41,two open hearth furnaces added at Zenica,No 4 built by Krupp-Essen, annual capacity increased to 95,000 tons; an electric furnace added; heavy rolling mill rebuilt and extended by Krupp-Magdeburg,capacity increased to 180,000 tons; 1939 output, 50,600 tons of pig iron at Vares,79,400 tons of crude steel and 2,800 tons of electric steel,as well as 55,300 tons of rolled steel at Zenica; structural steel,rails,plates and sheets made;

plant much enlarged after World War II and supposed to be further enlarged; composed late in 1956 of a coke plant of four batteries,built in 1953-56, joint capacity 400,000 tons; also using coke from the nearby Lukavac plant /working on local brown coal mixed with imported coking coal,plant still in experimental stage/; of two blast furnaces built in 1954-55, joint annual capacity 400,000 tons; six open hearth furnaces, some built with the help of a loan from International Bank in Washington,D.C., and others under construction; a blooming mill,first in Yugoslavia,built in 1953 by Brassert & Co of Pittsburgh,Pa., capacity 400,000 tons; in addition to prewar rolling facilities, some equipment obtained as reparation goods from Watenstedt plant, Hanover,Germany; this sheet mill modernized in 1955, annual capacity 30,000 tons; put in operation in 1956 or about to be installed in 1957, a wire mill, capacity 70,000 tons, a medium profile mill,capacity 150,000 tons, a railroad bandages mill, capacity 15,000 tons; a forge with 5100 tons press;

total investment in the plant by the end of 1955 - about 100 million dollars, about 16 million dollars to be invested in the near future; plant supposed to reach the annual capacity of 600,000 tons of pig iron,755,000 tons of crude steel /after the erection of four Bessemer converters/ and 540,000 tons of rolling goods,mainly plates for shipbuilding; capacity of steelworks in 1956 described as 500,000 tons;

estimated output in 1956 about 250,000 tons of pig iron and about 425,000 tons of crude steel; about 120,000 tons of rolled goods /concrete reinforcement rods,billets,structural steel /exported in 1956,mainly to Soviet Union and India.