

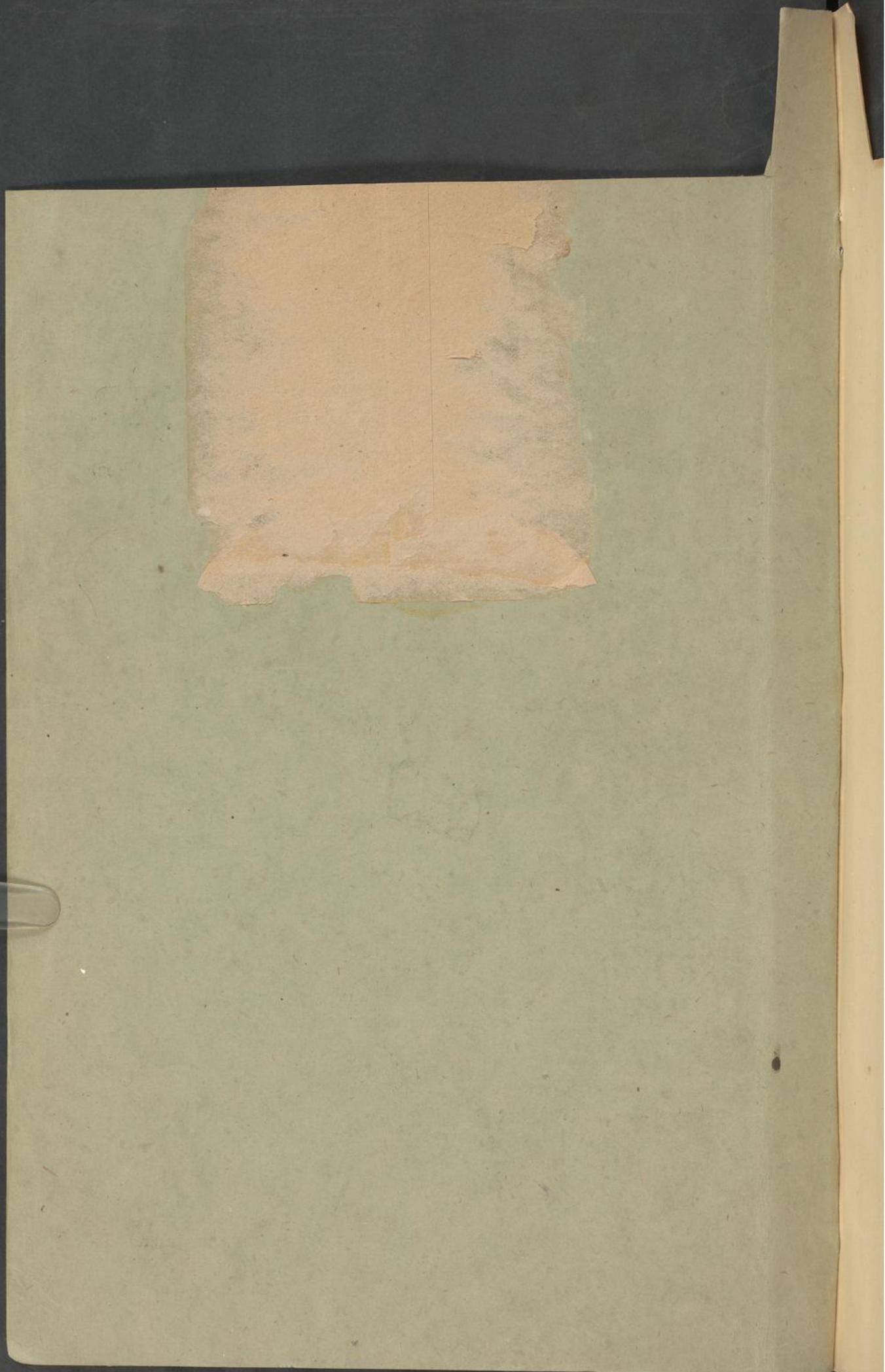
THE
BOMBER'S BAEDEKER

(Guide to the Economic Importance of German Towns and Cities)
2nd (1944) Edition.

Part II.

LAHR - ZWICKAU

Enemy Branch
(Foreign Office & Ministry of
Economic Warfare)



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Economic Warfare).

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1960/451

LAHR (Baden)

48° 20' N. 7° 55' E: 420 miles: (17,000)

Lahr is between Karlsruhe and Freiburg on the main railway line to Basle. It lies in the foothills of the Black Forest, and is a tourist resort. The town's activities include cardboard, leather, and wood manufacture. None of these is of importance.

-----oOo-----

LANDAU (Bavaria)

49° 10' N. 8° 5' E: 400 miles: (20,000)

Landau is a railway junction of some importance to the railway system of the Bavarian Palatinate. It lies on the line from Karlsruhe and Bruchsal to the Saar Territory. This line is crossed at Landau by the North to South line from Mainz to Strasburg. The town is in the wine-growing district of the Palatinate, and is also an important cattle market and agricultural centre. There is no noteworthy industry.

-----oOo-----

LANDSBERG (Brandenburg)

52° 45' N. 15° 15' E: 660 miles: (46,000)

Landsberg an der Warthe is East of Küstrin, and within 10 miles of the former Polish frontier. It is on the main railway line from Berlin to Insterburg and the Eastern Front. It has a small inland port for the barge traffic on the River Warthe. The town is mainly an agricultural centre, but there is a jute mill, which is mentioned below, and there are reports that the Agfa photographic film concern has established a new factory here.

Transportation

Inland Port

Landsberg (-)

This small inland port, which before the war handled some 120,000 tons per year, mostly agricultural produce, deals with the barge traffic on the River Warthe, which flows into the Oder at Küstrin, 6 miles to the West.

Chemicals and Explosives

Agfa

Landsberg (-)

The A.G. für Anilin Fabrikation (Agfa) a subsidiary of the I.G. Farben, and the largest photographic film making concern in Europe, are reported to have planned the erection of a branch factory in Landsberg an der Warthe. This branch, which was originally intended to go into production by 1938, was to be equipped for the entire process of film manufacture, with a capacity equal to 30% of the main Agfa plant at Wolfen (near Bitterfeld). Reports suggest that the factory was erected during the early part of the war and that it is now in operation.

/Textiles

LANDSBERG (contd.)

Textiles, Rayon, Pulp and Paper

Max Bahr A.G. Landsberg (-)

The Jutespinnerei & Weberei, Plan & Sackfabrik Max Bahr A.G. have a jute spinning and weaving mill at Landsberg which employed some 1,800 workers before the war. There are reports indicating that a large textile mill was under construction 4 miles to the Northwest of Landsberg which was expected to go into production in September 1943, but these reports have remained without satisfactory confirmation. The present activity of the Max Bahr A.G. factory is not known.

-----oO-----

LANDSHUT (Bavaria)

48° 30' N. 12° 10' E: 580 miles: (32,000)

Landshut is on the river Isar and on the main line from Munich to the Czech frontier. It is also on a cross country line from Regensburg to Salzburg and Upper Austria. It is a market town and there are several small industries, including flour milling, sugar refining, and the making of agricultural implements. None of these is individually of importance.

Transportation

Railway Repair Shops Landshut (3)

These are medium sized repair shops undertaking the repair of goods wagons.

Food Stuffs

Kunstmühlen Landshut (-)

The Ver. Kunstmühlen Landshut Rosenheim A.G. are flour millers, and have a grain storage plant in Landshut with a capacity for 40,000 tons.

-----oO-----

LANGENBIELAU (Silesia)

50° 40' N. 16° 35' E: 730 miles: (20,000)

Langenbielau is 3 miles from the town of Reichenbach in Lower Silesia. Its industry, which is on a small scale, is mainly textiles.

Textiles, Rayon, Pulp and Paper

Christian Dierig A.G. Langenbielau }
G.F. Flechtner " } (-)
Kauffmann Meyer A.G. Wüstegiersdorf }

These are three examples of a number of small cotton spinning, weaving, and textile finishing firms in the Langenbielau district.

-----oO-----

Langenfeld/

LANGENFELD (Rhineland)

51° 5' N. 6° 55' E: 485 miles: (17,000)

Langenfeld is 9 miles Southwest of Solingen, and is a municipality which was formed by amalgamating several small settlements, including Hardt and Immigrath. Apart from the engineering works mentioned below, there are no industries of importance.

Engineering and Armaments

Kronprinz

Immigrath (-)

The Kronprinz A.G. für Metallindustrie of Solingen-Ohligs have a small factory at Immigrath, with rolling mills and wire-drawing plant. This firm, which makes principally steel tubes, M.V. components, S.A.A., etc., is described under Solingen.

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LANGERFELD (Rhineland)

See under WUPPERTAL

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LAUBAN (Silesia)

51° 5' N. 15° 15' E: 665 miles: (17,000)

Lauban is on the railway line between Görlitz and Breslau. In peace-time textiles are the main industry, and the town specialises in the manufacture of handkerchiefs. There are over 100 factories, none of individual importance, which in 1938 employed between them some 4,000 workers. Lauban is a market town for cattle and horses, and there are large railway-repair shops.

Transportation

Railway Repair Shops

Lauban (3)

These repair shops are believed to employ some 1,500 workers and undertake the repair of electric and steam locomotives and rolling stock.

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LAUCHERTHAL (Hohenzollern)

See under SIGMARINGEN.

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LAUENBURG (Pomerania)/

LAUENBURG (Pomerania)

54° 35' N. 17° 45' E: 775 miles: (19,000)

Lauenburg is in the Eastern part of Pomerania within 6 miles of the former Polish frontier. It must not be confused with Lauenburg in Schleswig-Holstein. It is on the main line from Stettin to Danzig and is the junction for a branch line leading to Leba, a small fishing harbour on the Baltic, 20 miles to the North. The town's activities are mainly agricultural, and there are a number of furniture and barrel making factories.

Transportation

Railway Repair Shops Lauenburg (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

-----oOo-----

LAUTA (Brandenburg)

51° 30' N. 14° E: 615 miles: (6,000)

Lauta is near Senftenberg in the extreme South of the Province of Brandenburg, close to the border of Lower Silesia. It is 21 miles South-east of Finsterwalde. The surrounding area has extensive brown-coal deposits, and adjacent to one of the brown-coal mines is a very large electric station supplying power to the highly important aluminium plant described below.

Public Utility Services

Power Station Lautawerk (1)

This thermal power station is owned by Vereinigte Aluminium Werke A.G. and has an installed capacity of 222 MW. It forms part of the site of the largest aluminium works in Germany, (see under Non-ferrous Metals). The electrical output of the station is mainly, if not wholly, supplied to the aluminium works whose maximum demand is estimated to be at least 200 MW and whose annual requirements are about 1,500 million kWh.

The station is connected to Trattendorf, Golpa, and Niederwartha stations by 110 kV lines, via which the requirements of the aluminium works can be supplemented.

Power Station LAUTAWERK NORD (3)

There is a smaller power station attached to the Erika brown-coal mine owned by the Ilse Bergbau A.G., It has an installed capacity of 30 MW.

Solid Fuels/

LAUTA (contd.)

Solid Fuels

Grube Erika

Lautawerk Nord (3)

The Erika brown-coal mine belongs to the Ilse Bergbau A.G., and had an annual output of about 2,800,000 tons in 1937. A large briquetting plant adjoins the mine. Approximately 1,000 workers were employed before the war.

Non-Ferrous Metal Manufacture and Fabrication

VAWAG

Lautawerk (1)

The extensive works of the Vereinigte Aluminium Werke A.G. are situated one mile to the East of Lauta and on the Northern side of the railway from Ruhland to Liegnitz and Lower Silesia, which passes through this neighbourhood in an easterly direction. The works have a capacity for 70,000 tons of aluminium and 140,000 tons of alumina per annum. The works have been repeatedly extended in recent years. Several thousand workers, including a large proportion of foreign labour, are employed at this plant, which is one of the most important of the German non-ferrous metal industry.

-----oOo-----

LECHFELD (Bavaria)

48° 10' N. 10° 50' E.

555 miles:

Lechfeld is a railway halt on a branch railway which follows the course of the river Lech to the South of Augsburg. On the "Lechfeld", which is the name given to wide plain through which the river flows, is an aircraft experimental station.

Aircraft and Aero-engines

Airfield

Lechfeld

The Messerschmitt concern of Augsburg have an aircraft experimental station on the G.A.F. Airfield at Lechfeld. It is believed that the experimental station is mainly engaged on the development of aircraft proto-types.

LEHRTE (Westphalia)/

LEHRTE (Westphalia)

52° 21' N. 9° 58' E. 435 miles: (11,000)

The town of Lehrte is situated 10 miles East of Hanover. The main Berlin-Ruhr Autobahn runs East-West just North of the town and the Mittelland Canal makes a broad sweep 5 miles to the South and meets the branch canal from Hildesheim. Lehrte is an important railway junction; it stands at a point where the main heavy-goods route from Berlin to Paris via Hanover and the Ruhr is crossed by Germany's most important North-South line leading from Hamburg to Frankfurt/Main and Munich. The town has some light engineering works, a sugar factory, and a chemical works.

Transportation

Marshalling Yard Lehrte (2)

The marshalling yard is situated West of the town and at its Eastern end merges into the railway junction. The yard has a capacity for 4,000 wagons in 24 hours. The important locomotive depots are in the centre of the junction.

Public Utilities

Transformer station W.of Lehrte (2)

The 220/110 kV open-air transformer and switching station is situated 3 miles West of Lehrte and 7 miles East of Hanover in open country immediately adjacent to the Hanover-Lehrte railway line. It is owned by Preussische Elektrizitäts A.G. and is an important link in the electricity supply system controlled by that company; it is the junction of the East-west North-south 220 kV line and is the main load-distributing station in the whole network of the company.

The plant is in two main sections; one section is for 220 kV and the other for 110 kV, 50 kV, and lower voltages. The 220 kV lines connect to Harbke, Bielefeld, and possibly Hamburg.

A 220 kV line runs South to the Borcken brown-coal station and Bringhausen pumped-storage plant, both owned by the Company, thereby providing for large extra sources of supply of power.

The 110 kV lines connect to Ahlem and other districts, but details of these are not available. There is most probably a 220 kV connection to the large private station at the H. Göring works at Hallendorf. The station is the main standby for supply of current to the town of Hanover.

Chemicals and Explosives/

LEHRTE (contd.)

Chemicals and Explosives

Chemische Fabrik Lehrte G.m.b.H. Lehrte (3)
Hanover.

This firm is one of the chief manufacturers
of chlorinated solvents in Germany.
Main product is Trichlorethylene.

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LEIPHEIM (Bavaria)

See under UIM

-----oO-----

LEIPZIG (Saxony)

51° 20' N. 12° 20' E: 540 miles: (720,000)

Leipzig is the largest town in Saxony. It is highly industrialised, particularly in textiles and engineering. Prior to the war the famous Leipzig Trade Fair drew a large commercial public from all parts of the world. Leipzig's main railway station is the largest in Europe. The Supreme Courts of Law of the Reich are established in the city and Leipzig is also the centre of the German publishing industry. Railway lines radiate from the city in all directions, and there are extensive marshalling yards which form an important base for the traffic to the Eastern Front. Leipzig's industries have been developed chiefly on the outskirts of the town and can be divided into two main groups. The first extends from the main station to the North East and South of the city. This area contains several important engineering plants, spinning and weaving mills, and the Northern power station. The second industrial group is on the Western outskirts. This district includes some of the largest wool and cotton spinning mills in Europe and a number of big engineering works. During the war important aircraft assembly plants have been established on the airfield at Mochau on the North-eastern edge of the town area. The city also contains a number of chemical works, mostly engaged on the manufacture of soap and dyestuffs.

Transportation

Railway Centre Leipzig (2)

This terminal station, which is the largest building of its kind in Europe, is an important centre serving many parts of Germany and the Continent. In particular there are lines leading from Leipzig to Berlin, Breslau, Dresden, Frankfort, Halle, and Southern Germany. The area includes marshalling yards, postal sidings and storage depots.

Marshalling Yards/

LEIPZIG (contd.)

Marshalling Yards Paunsdorf (3)

These marshalling yards, which are situated in the Eastern suburb of Paunsdorf, can handle up to 3,500 wagons per 24 hours.

Marshalling Yards Wahren (3)

These yards are in the North-western suburb of Wahren. They have a capacity of 4,500 wagons per 24 hours.

Railway Repair Shops Delitzsch (3)

At Delitzsch, 10 miles North of Leipzig, there are railway workshops formerly employing some 1,200 workers and undertaking chiefly the repair of goods wagons.

Power Station Böhlen (1)

This very large thermal power station is owned by the A.G. Sächsische Werke (ASW) and has an installed capacity of 393 MW. It is situated on the brown-coal deposits at Böhlen, 11 miles S. of Leipzig, and is part of a large industrial complex which includes, besides the power station, a synthetic-oil plant (described below under Liquid Fuels), a low temperature carbonisation plant, (described below under Solid Fuels), and a gas-works (described below). The station is operated on base load and supplies current to the grid system and the city of Leipzig and is also the source of power to the synthetic-oil plant, whose estimated maximum demand is 75 MW with an annual consumption of over 500 million kWh. Five long-distance double-circuit 110 kV lines run to Chemnitz, Gossnitz, Zeitz, Lausen, and Leipzig respectively and another probably connects with the neighbouring double station of Espenhain-Molbis. Local 30 kV supplies connect to Leipzig by underground cables and at lower voltages to neighbouring industrial works.

Gasworks Böhlen (3)

The gas works is part of the ASW complex at Böhlen and was erected in 1939 by the Company for the supply of domestic gas to Leipzig and the surrounding district. It operates the Luigi complete-gasification process, using brown coal. Capacity is believed to be about 5,000 million cu.ft. per annum.

Power Station/

LEIPZIG (contd.)

Solid Fuels

Brown-coal Mines

Böhlen

(-)

There are a number of brown-coal deposits adjacent to the small town of Böhlen some 10 miles South of Leipzig. They are open-cast mines and are exploited mainly by the A.G. Sächsische Werke (ASW) of Dresden. They supply the two power stations, also owned by the same company, which are mentioned above under Public Utilities. The mine includes a briquetting plant which produced 3,367,000 tons in 1937. Some 1,360 workers were then employed.

Liquid Fuels

Brabag

Böhlen

(2)

The Braunkohlen Benzin A.G. whose headquarters are in Berlin, have at Böhlen a low-temperature carbonisation and brown-coal tar-hydrogenation plant for the manufacture of synthetic oil. It is adjacent to the power station, mentioned above under Public Utilities. It is estimated that the hydrogenation plant has an annual capacity of 300,000 tons and it is thought possible that there is in addition a high-pressure Fischer-Tropsch plant.

Non-Ferrous Metal Manufacture and Fabrication

Leichtmetallwerke

Rackwitz

(3)

The Leipziger Leichtmetallwerke is situated in the outlying suburb of Rackwitz, some 6 miles to the North of the town. It specialises in the production and fabrication of light-metal alloys.

Edmund Becker & Co. A.G.

Leutzsch

(3)

This factory is believed to have employed some 1,200 workers in 1939, on the manufacture of light-metal castings for the aircraft industry.

Metallgussgesellschaft m.b.H.

Leutzsch

(3)

This is a subsidiary of Edmund Becker & Co. A.G. mentioned above. It is situated in the Western suburb of Leutzsch, and is engaged on the production of light-metal castings for the aircraft industry. The plant is reported to have been greatly enlarged since the outbreak of war.

Aircraft and Aero-Engines/

LEIPZIG (contd.)

Aircraft and Aero-Engines

Aircraft Assembly Plants

The former municipal airport is situated in the North-eastern suburb of Mockau. Since the war A.T.G., Erla and Junkers have all erected assembly plants on the airfield and they are closely interlinked with the components works in other parts of the city.

"Erla"	Mockau	(2)
"Erla"	Heiterblick	(1)
"Erla"	Abtnaundorf	(3)
"Erla"	Leipzig proper (Werk V)	(2)

The Erla Maschinenwerk G.m.b.H. with its various components factories forms a largely self-contained complex capable of construction and complete assembly of aircraft. In 1943 it became one of the three large assembly units for Me. 109 under the fighter expansion programme. The main assembly plant is situated on the aerodrome at Mockau, a small suburb lying a few miles to the North East of the town. The chief components factory is in the North-eastern suburb of Heiterblick, and there is another in Abtnaundorf, also to the North-east. The works at Mockau are engaged on the assembly of Me.109 fighters. The Heiterblick factory produces major aircraft components, including wings and fuselages, and various reports indicate that the plant was employing up to 10,000 workers prior to the attack by the VIIIth Air Force. The Abtnaundorf factory is also engaged on the manufacture of aircraft components, probably wings. (Werk V was the former Kammgarnspinnerei and is believed to be engaged on press work and machining.)

A.T.G.	Mockau	(2)
A.T.G.	Grosszschocher	(2)
A.T.G.	Eutritz	(2)
A.T.G.	Leutzsch	(3)

The Allgemeine Transportanlagen G.m.b.H. is of considerable importance as a bomber factory to the German aircraft industry. The main assembly plant of this concern is situated on the aerodrome at Mockau. It formerly produced He.111, but gradually went over to the Ju. 88. Some production of Ju. 52 transports has been going on since before the war.

It/

LEIPZIG (contd.)

It is reported to employ some 5,000 workers. The chief branch factory is in the South-western suburb of Grosszschocher and manufactures major aircraft components, including wings and fuselages. A second subsidiary factory at Grosszschocher is situated immediately to the North-west of the above-mentioned plant. In the North at Eutritz and in the West at Leutzsch are two further factories, one making fuselages, the second other components. The Leutzsch works were formerly part of the Hüpfeld Gebr. Zimmermann A.G. makers of pianos and furniture. A.T.G. have in addition 3 or 4 other small plants in Leipzig or its vicinity but the exact location and activity is not known.

Motorenwerke Seegeritz (2)
(Taucha)

The Mitteldutsche Motorenwerke is situated in the North-eastern suburb of Seegeritz. It is a subsidiary of the Auto-Union and carries on the manufacture of the Jumo 211 and 213 aero-engines under licence. It is also important for the manufacture of crankshafts and other aero-engine components, and may make the Jumo 004 turbine unit.

Junkers Mookau (3)

The Junkers concern have a works on the aerodrome at Mookau, which is reported to be engaged on the repair, maintenance, and assembly of Ju. 88 and Ju. 52 aircraft.

World Fair Leipzig (3)

The buildings of the Leipzig World Fair (Leipziger Messe) are on the Ausstellungsgelände on the Western side of the railway and South-west of the Stotteritz Bahnhof. The Exhibition Halls are said to have been taken over and used as engineering shops by the Junkers concern in particular for the repair depot at Mookau.

Engineering and Armaments

Hugo Schneider A.G. Paunsdorf (1)

The parent works of this important engineering firm are in the suburb of Paunsdorf on the Eastern side of Leipzig. There are branch factories in Berlin and Oberweissbach in Thuringia. They produce rods, sheets, wire and constructional parts in copper, brass and aluminium and in peacetime are makers of all kinds of heating, lighting and cooking apparatus, enamelled goods and vacuum flasks. They employed some 9,000 workers before the war. They are now reported to be making light arms, S.A.A. and armament components. It is believed that a portion of the former machine-tool production of the Schiess A.G. of Düsseldorf has now been transferred to these works.

Kollmann Werke A.G./

LEIPZIG (contd.)

Kollmann Werke A.G. Torgauerstr. (3)

This firm, which in 1938 employed about 1,000 workers, manufactures gears, machine tools, and torpedo components particularly propellor shafts and gears. A recent report suggests that the gears are destined for use in the Opel, Daimler-Benz, and Auto-Union factories.

Kugellagerfabrik Leipzig (3)

Kugellagerfabrik Böhlitz-Ehrenberg (3)

The Deutsche Kugellagerfabrik G.m.b.H. are believed to have two plants in Leipzig, one in the centre of the town, the other in the Western suburb of Böhlitz-Ehrenberg. The company manufactures a variety of types of ball bearings including needle bearings, formerly used particularly in aircraft and now probably in A.F.V.'s. It is believed to employ 1,200 workers.

Büssing-N.A.G. Leipzig (2)

The parent works of this important undertaking is in Brunswick. The Leipzig branch constructs armoured cars and engines for A.F.V.'s and is also reported to carry out heavy repairs of military vehicles. Reports suggest that some 6,000 workers are employed.

Meier & Weichelt Weicheltstr. (2)

The Meier & Weichelt Stahlwerke are makers of grinding and polishing machinery, steel furniture, lathes and machine tools for the metal- and wood-working industries. It has been reported that their works have been enlarged during the war and that a portion of the former machine tool production of the Schiess A.G. of Düsseldorf has been transferred to this firm. Meier & Weichelt are also one of the leading German makers of track shoes and links for tanks and semi-tracked vehicles, and have also been reported to be making gun parts. Reports indicate that in 1943 some 4,000 workers were employed.

Karl Krause Zweinaundorferstr.(3)

The engineering firm of Karl Krause K.G. formerly manufactured machinery for the paper, board, and printing industries. They are now reported to employ some 1,500 workers on the production of tank and small-arms components.

Pittler A.G./

LEIPZIG (contd.)

Schumann & Co. Karl Heine Str. (3)

This company formerly made all types of valves and heating apparatus. They are now reported to employ some 450 workers and to manufacture components for submarines, and shells.

Tura-Werk G.m.b.H. Luppenstr. (-)

This firm normally makes cash registers and slot machines and before the war employed some 500 workers. They are probably now manufacturing war products suitable to this type of plant.

Kiesewetter Gutenbergstr. (3)

Rudolf Kiesewetter, Excelsior Werk are manufacturers of all types of electrical measuring instruments, including volt-meters and ammeters, from small pocket instruments of single and combined types, to larger switchboard types. They normally employ some 400 workers.

Rudolf Sack K.G. Leipzig (3)

This firm is believed to employ over 2,000 workers on the production of all types of agricultural tools and machinery. In 1937 the plant had an approximate daily output of 1,000 ploughs.

Chemicals and Explosives

Springer & Möller A.G. Franz Flemming Str. (-)

This company employed some 650 workers before the war on the manufacture of varnishes and dyes.

Schulz A.G. Hadenbergstr. (-)

The Fritz Schulz A.G. specialises in polishing and cleansing preparations. They employed 450 workers before the war.

Otto Strumpf A.G. Bitterfelderstr. (-)

The Otto Strumpf A.G. are manufacturers of pharmaceuticals and cosmetics. In 1937 they employed some 700 workers.

Heine & Co. A.G. Leipzig (-)

This is one of several firms in Leipzig which specialises in the manufacture of soaps, perfumes and cosmetics. It had a pre-war total of 250 workers.

Textiles, Rayon, Pulp and Paper.

LEIPZIG (contd.)

Textiles, Rayon, Pulp and Paper

Stöhr A.G. Plagwitz (3)

This large textile concern has its main works in Leipzig and branch factories in Chemnitz, and the Ruhr, and also in Holland. The Leipzig factory is situated in the Western suburb of Plagwitz and includes one of the largest wool-spinning mills in Europe. Its equipment comprises 122 combers, 137,000 spindles and 38,000 doublers. In 1937 they employed a total of some 3,300 workers.

Wollkammerei Volbedingstr. (3)

The Leipziger Wollkammerei A.G. is a subsidiary company of the Stöhr concern. This wool combing plant, which is reputed to be the third largest of its kind in Germany, is situated to the North-east of the main railway station. In 1939 some 2,000 workers were employed.

Baumwollspinnerei Schönau (3)

The Leipziger Baumwollspinnerei A.G. is situated in the Western suburb of Schönau. This cotton spinning mill is also among the largest of its kind in Europe and the equipment includes 237,000 spindles and 2,270 doublers. The plant is reported to have an annual capacity for 30,000 bales of cotton. In 1938 the company, which has a branch factory in Wolkenburg, was employing a total of some 2,500 workers.

Rubber and Tyres

Zieger & Wigand A.G. Alfred Kindler (-)
Str.

This firm, which before the war employed some 230 workers, normally manufactures all types of surgical and medical rubberware.

Vulkan Gummiwarenfabrik Leipzig-Lindenau (3)
Weiss and Baessler A.G.

Prior to the war 500 to 600 workers were employed in this factory in the manufacture of medical goods (including an important output of prophylactics) rubber gloves, hard rubber medical products, and mechanicals.

Hans Werner, Vulcom-Pneu-Fabrik Leipzig (-)

This is a government licensed re-treading concern with capacity to process 1,000 tyres per month including tractor, aero-, and motor tyres.

LETMATHE/

LETMATHE (Westphalia)

51° 21' N. 7° 28' E: 335 miles: (26,000)

Letmathe, including its neighbouring town of Hohenlimburg, lies at the South-eastern end of the Ruhr area 12 miles South East of Dortmund and 7 miles East of Hagen. Both towns have a considerable number of small firms engaged in light engineering, and one or two larger firms listed below, which specialise in the production of wire and springs for railway wagons, locomotives and motor vehicles. Other products are metal bands and nails.

Non-Ferrous Metal Manufacture and Fabrication

Walter Voos Letmathe (3)

Believed to be numbered among the more important cobalt refineries in Germany, this works has an estimated capacity of 3,000 tons of cobalt p.a. It is unlikely to be working at anything approaching capacity.

Engineering and Armaments

Gustav Schnadt Letmathe (-)

This firm has a small foundry and produces centrifugal casting machines.

Döhner A.G. Letmathe (3)

The firm of Stahl- u. Eisenwerke Döhner A.G. has two works, one in Iserlohn and one in Letmathe. The plants comprise cold-rolling mills, hardening, tempering and tube works, and steel wire-drawing plant. Strip, band, and sheet metal is produced; also wire, machine-tool steel, moulds, tubes and other metal goods.

Ver. Deutsche Nickel-Werke A.G. Letmathe (3)

The Letmathe branch of this firm is built on a site of 106,800 sq. metres and comprises smelting and wire-drawing works, and sheet, rod and strip rolling mills. Semi-finished metal goods are manufactured.

Alfred Löttes }
Görke und Steins } Letmathe (-)
Tossicke Kettenfabrik }

The above are three of the more important metal works in Letmathe. They are engaged on precision wire-drawing, production of screws, and production of chains respectively. None of these factories is of individual importance.

Hoesch A.G./

LEVERKUSEN (contd.)

I.G.Farbenindustrie A.G. (contd.)

One of its main activities is connected with the tableting and ampouling of pharmaceutical and medicinal preparations, serums and associated products. It is by far the largest tableting and ampouling works in Europe, and, apart from finishing medicinal and pharmaceutical preparations manufactured at the Leverkusen works, also undertakes the tableting and ampouling of practically the entire output of these products manufactured at Elberfeld, the largest German pharmaceutical plant, and Höchst.

The heavy-chemical plant at Leverkusen consists primarily of the sulphuric-acid unit, which is estimated to have a capacity of 300,000 tons per year or roughly 11% of the total German capacity. It is the largest German sulphuric-acid unit. The plant is also an important producer of electrolytic caustic soda and chlorine.

Leverkusen is also one of the largest German factories making dyes and associated products.. Among other preparations made here on a large scale are film base, films, photographic paper, filters and photographic chemicals. The works includes a synthetic-rubber plant producing "Perdurine" rubber, estimated to have a capacity of 4,000 tons per annum. Several, apparently reliable, reports indicate that toxic acids and smoke-producing compounds are prepared at Leverkusen. It is probable that the filling process would be carried out in one of the several filling stations situated within the Cologne area. Situated within the works is the plant of the Titanium G.m.b.H., one of the leading German producers of titanium pigments. It is believed that the Leverkusen works employs more than 20,000 people. The works, which extend for over one mile along the river front, occupies the whole area between the river and the North-to-South railway along the right bank of the Rhine, which here runs parallel with, and approximately 1,100 yards from, the river. The works has extensive rail sidings, rail storage depots, and large harbour facilities.

Dynamit A.G./

LEVERKUSEN (contd.)

Dynamit A.G.

Schlebusch

(2)

This factory was of considerable importance in the last war. In 1918 it was one of the most important T.N.T. factories in Germany and produced more than 1,000 tons per month. It was one of the few factories permitted to continue the manufacture of T.N.T. under the Versailles Treaty and was producing 294 tons monthly in 1923. Both ground reports and air photographs suggest that the factory has returned at least to its full former level of activity, and certain extensions appear to have been made. The factory has not only its own nitric-acid plant (as is common practice in large explosives factories), but also its own sulphuric-acid plant using the contact process, which is unusual. It is apparent that T.N.T. is still the chief product of the plant, capacity being probably about 15,000 tons per annum. It is clear that other explosives are also made at Schlebusch but it is not certain what these are. It almost certainly has plant for the manufacture of nitroglycerine, which may now be used for the production of diglycoldinitrate. In the last war the factory produced a small quantity of hexanitrodiphenyl-sulphide, and although this explosive does not now appear to be used by the German forces the plant would be suitable for the manufacture of hexanitrodiphenylamine.

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LIEGNITZ (Silesia)

51° 15' N. 16° 10' E: 700 miles: (78,000)

Liegnitz is in Lower Silesia, 40 miles West of Breslau on the main line from Berlin. It is a junction for four branch lines and is the centre of a large agricultural district. There is a considerable textile industry, and several engineering works, one of which has been expanded during the war and is described below.

Transportation

Railway Repair Shops

Liegnitz

(3)

These are medium-sized repair shops which undertake the repair of goods wagons.

Public Utility Services

Municipal Gasworks

Liegnitz

(3)

In 1936 the municipal gasworks made 220 million cubic feet of gas.

Engineering & Armaments/

LIPPSTADT (contd.)

Engineering and Armaments

Ver. Stahlwerke A.G. Lippstadt (2)

These branch works of the Ver. Stahlwerke A.G. employ some 3,500 workers, and make bodies for bombs, shells, and torpedoes. They are also reported to be producing gun barrels. It is believed that these works are the former Dornheim A.G. of Lippstadt.

Westfälische Union A.G. Lippstadt (2)

The Lippstadt branch works of the Westfälische Union A.G. is a wire-drawing plant at present engaged largely in the production of barbed wire. Their other products include wire cables, wire gauze, and nails. Westfälische Union belongs to the Ver. Stahlwerke A.G., and have several works in other towns of Western Germany. They specialise, among other things, in welding electrodes, and the Lippstadt works is believed to account for approximately 20% of the total German output.

Metallindustrie Lippstadt (2)

The Westfälische Metallindustrie A.G. are makers of fuzes, detonators, S.A.A., and torpedo components. They are believed to employ some 2,500 workers.

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LÖBAU (Saxony)

51° 5' N. 14° 40' E: 640 miles: (15,000)

Löbau is in the Eastern area of Saxony, 15 miles South-east of Bautzen. There are a variety of industries, including spinning and weaving mills, dyeworks, and makers of agricultural machinery. The factories are all on a small scale.

-----oO-----

LÖRRACH (Baden)

47° 35' N. 7° 40' E: 440 miles: (21,000)

Lörrach is in the foothills of the Black Forest, close to the Swiss frontier, and within 5 miles of Basle. There are several minor textile firms making silk goods and sewing silks, a chocolate factory belonging to Nestle, and a number of small engineering and metal-working factories. None is of importance.

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LÜBECK/

LÜBECK (contd.)

Power Station Herrenwyk (2)

This thermal generating station lies 2 miles to the East of the Siems station. It has an installed capacity of 28 MW. It is connected to the substation at Schlutup and believed to be connected to the generating station at Siems.

Substation Niendorf (3)

This is a tertiary substation to the South-West of the town of Lübeck and is connected to the Siems generating Station, probably by 110 kV line.

Solid Fuels

Hochofenwerk Coking Plant Herrenwyk (3)

This plant, on the site of the Hochofenwerk Lübeck A.G. steel works, has 203 ovens and a maximum est'd dry coal capacity of 477,000 tons per annum.

Iron and Steel

Hochofenwerk Lübeck A.G. Herrenwyk (3)

The Hochofenwerk Lübeck A.G. is situated in the North-eastern suburb of Herrenwyk. The Hüttenabteilung includes 3 blast furnaces and an ammonia and benzol plant. This company has a branch factory in Stettin, and in 1938 employed in the two plants a total of some 2,700 workers.

Aircraft and Aero Engines

Dornier-Werke Curt Helm Str. (2)

The Norddeutsche Dornier Werke G.m.b.H. are a subsidiary company of the main Dornier concern. They have factories in Berlin - Reinickendorf, Wismar and Lübeck. The Lübeck branch was formerly the Leichtkonstruktion Lübeck G.m.b.H. and is thought to have been taken over by the Dornier company in the summer of 1938. In 1940 this plant was reported to employ some 3,000 workers, and it is said to be producing components and fuselages for the assembly factory at Wismar.

Shipbuilding (See also under Engineering and Armaments.)

Flenderwerke Herrenwyk (1)

The Lübecker Flenderwerke A.G. are situated in the North-eastern suburb of Herrenwyk. The yard has extensive /facilities

LÜBECK (contd.)

Flenderwerke

facilities including 5 large slips, between 460 and 520 feet in length. It normally builds merchant ships of medium tonnage, and also floating docks, locks, pontoons etc. Since the war the yard has worked mainly on 500-ton U-boats, but a number of 600-ton mine-sweepers have also been built. Three floating docks, 310 - 530 feet in length are available and a great deal of repair work is done. In September 1943, 16 U-boats were reported under construction and fitting out. The Flenderwerke also have an important structural steelwork and bridging department.

Engineering and Armaments

Drägerwerke

St.Lorenz-Süd (2)

The Drägerwerke, which are situated in the Western suburb of St.Lorenz-Süd, are manufacturers of under-water diving and escape apparatus, service respirators, life-saving appliances, oxygen breathing and regulating apparatus, air life-jackets for airmen, and welding and cutting installations. In 1938 the plant employed some 2,000 workers.

Maschinenbau Gesellschaft

Karlstr. (2)

The Lübecker Maschinenbau Gesellschaft is a subsidiary company of Orenstein & Koppel A.G. It employs some 3,000 workers on the manufacture of all types of dredging and excavating machinery. The works are on the Eastern side of the Wallhafen, and are served by rail sidings. They include a shipyard with three small slips (up to 280 feet in length) where merchant vessels up to 3,000 tons gross, as well as dredges, floating cranes, and tugs are built. Their special wartime construction includes 600-ton minesweepers and escort vessels.

/Maschinenfabrik

LÜBECK (contd)

Maschinenfabrik B. Berghaus Umschlaghafen (2)

The Berliner-Lübecker Maschinenfabrik Bernhard Berghaus is situated in the Umschlaghafen, which lies to the North of the town. It is reported to employ several thousand workers on the manufacture of rifles and light machine guns.

Maschinenfabrik Beth A.G. Kanalhafen (-)

These works are situated to the North of the town. They are engaged on the manufacture of machinery for dust elimination and recovery in factories, and employed some 350 workers in 1938.

"Lubecawerke" G.m.b.H. Glashüttenweg (-)

This firm is engaged on the manufacture of machinery for the tin plate and canning industry.

D. W. M. Schlutup (3)

The parent works of the Deutsche Waffen- und Munitionfabriken A.G. are in Berlin. The Lübeck branch is situated in a large wood near the North-eastern suburb of Schlutup. Recent reports suggest that the plant is producing shells of various calibres and has a total of 2,000 employees of several nationalities.

Chemicals and Explosives.

Guano-Werke Danischburg (-)

This firm, whose parent works are in Hamburg, has a branch factory in the suburb of Danischburg. It lies to the North of the town on the left bank of the river Trave. The plant, which has its own quay and loading facilities, employs some 450 workers on the manufacture of sulphuric acid and superphosphates.

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LUCKENWALDE/

LUCKENWALDE (Brandenburg)

52° 5' N. 13° 10' E: 570 miles: (35,000)

Luckenwalde is 30 miles South of Berlin on the main railway line to Jüterbog where the line divides, one branch leading to Halle and Leipzig, and the other to Dresden. The industries include cloth mills and several engineering firms. In peacetime Luckenwalde was well known for the manufacture of pianos, furniture, and metal fittings.

Engineering and Armaments

Richard Matzke Luckenwalde (-)

The Luckenwalder Schraubenfabrik Richard Matzke is one of several factories in this town which produce nuts, bolts and screws.

A. Bartosik & Co. Luckenwalde (-)

This firm specialises in peacetime in metal fittings for furniture and is now reported to be making parts (including recoil springs) for A.A. and machine guns.

Textiles, Rayon, Pulp and Paper

C. W. Fahndrich Luckenwalde (-)

These cloth manufacturers have the largest of several textile mills in this neighbourhood and are believed to be important producers of uniform cloth.

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LÜDENSCHIED (Westphalia)

51° 15' N. 7° 35' E: 335 miles: (40,000)

Lüdenscheid is in the Sauerland, a hilly district of South Western Westphalia, for which it serves as a tourist centre. It lies near to the valley of the River Lenne, and like all the numerous settlements in this district, has a large number of metal-working establishments. There are over 300 such factories in Lüdenscheid, employing a total of some 10,000 workers. Small items of military equipment are among the products, which also include cutlery and small kitchen utensils, buttons, pins, and similar metal goods. Three firms mentioned below are given as examples.

Engineering and Armaments

Württembergische Metallwaren Fabrik A.G.)
Ver. Deutsche Metallwerke A.G.) (3)
Metallwerke Max Kamper A.G.)

The above are three of a very large number of light-engineering works, brass foundries, and metal fitting manufacturers in Lüdenscheid.

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LUDWIGSBURG (Württemberg)

48° 55' N. 9° 10' E: 450 miles: (40,000)

Ludwigsburg is 6 miles North of Stuttgart and was formerly a residence of the Kings of Württemberg. It is immediately North of Kornwestheim which is dealt with separately. Ludwigsburg is mainly a residential town but there are a number of small scale industries, some of which have been developed during the war. The thermal power station at Marbach (in the Neckar valley) and the Stuttgart power station are described under the heading "Stuttgart".

Engineering and Armaments

Beru-Werk Ludwigsburg (3)

The Beru-Werk Albert Ruprecht are makers of automobile components, in particular of sparking plugs and ignition units.

Zahnradfabrik Solitudeallee (-)

The Getrag Getriebe & Zahnradfabrik A.G. are makers of gear boxes, cogwheels and other automobile components. Before the war they employed some 200 workers.

Excelsior Ludwigsburg (-)

The Excelsior Maschinenbauges, Dr.O.Schneider are makers of sifting and washing machinery for sand, gravel and mineral ores.

Ziemann Ludwigsburg (-)

The A.Ziemann A.G. are makers of machinery, in particular for the brewing and chemical industries, and of aluminium tanks and cooling apparatus. Their works were formerly in Stuttgart but in 1936 they moved into new factory premises in Ludwigsburg. They employed some 250 workers before the war.

Armaments Factory Ludwigsburg (-)

It has been reported that a large factory for the assembly of small arms has been established in the North West of the town near to the group of four barracks.

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LUDWIGSHAFEN (Bavaria)

49° 30' N. 8° 30' E: 400 miles: (150,000)

Ludwigshafen, which is on the left bank of the Rhine opposite Mannheim, and the largest town in the Bavarian Palatinate, is dealt with under the heading "Mannheim".

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LÜNEBURG (Hannover)

53° 15' N. 10° 25' E: 460 miles: (32,000)

Lüneburg is 30 miles South-east of Hamburg, and on the Northern edge of the Lüneburger Heide. It is on the main line from Hamburg to Hannover, and is the junction for five branch lines of local importance. In former times Lüneburg was a large supplier of salt, and it is now a health resort which is visited largely for its brine baths. The Lüneburger Heide has been developed into an important agricultural district, and Lüneburg is one of the principal market towns. There are chemical works, one of which is mentioned below, and a variety of wood-working factories making furniture, barrels, parquet flooring, and similar products.

Transportation

Railway Repair Shops Lüneburg (3)

These are medium sized repair shops undertaking the repair of goods wagons.

Chemicals and Explosives

Saline Lüneburg Neue Sülze (-)

The Saline Lüneburg & Chemische Fabrik A.G. employed some 300 workers before the war, and produced soda, rock and table salt, and lime fertilisers.

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LÜNEN (Westphalia)
See under Dortmund

LUNOW (Brandenburg)

52° 55' N. 14° 5' E: 610 miles: (1,500)

Lunow is 8 miles South-east of Angermünde and 40 miles North-east of Berlin. It is on the left bank of the river Oder and has no importance apart from the Explosives factory mentioned below.

Chemicals and Explosives

Dynamit A.G. Lunow (3)

This factory was apparently under construction at the beginning of the war and has certainly been greatly enlarged since. There is very little ground information concerning its activities, but it appears to be important. Unfortunately the only air reconnaissance of the region has provided no more than a photograph of a small corner of the explosives factory in which are some storage sheds. The size of these does not contradict the impression that the factory itself is not of considerable size.

It is fairly definitely established that penthrite is made in this factory, and it was reported in 1940 that plant for the production of a new explosive for

torpedoes/

LUNOW (contd.)

torpedoes and bombs had gone into production. The nature of this new explosive is uncertain, but it may be hexanitrodiphenylamine (which is commonly used in German torpedoes and mines), or it may be hexogen. It is significant that the site of manufacture of hexogen in Germany has not been positively identified, although this explosive is now used by the German forces.

The factory is reported to be opened by Dynamit A.G., but its ownership has not been confirmed. It lies 4 kms. from Luniw on the west bank of the river Oder.

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LUTTRINGHAUSEN (Rhineland)

See under Remscheid.

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L Y G K (East Prussia)

53° 50' N. 22° 20' E: 955 miles: (16,000)

Lyck is in the South Eastern portion of East Prussia, within 10 miles of the Polish border. It is an agricultural centre with horse and cattle markets, and has no industries of importance. It is on a railway line leading from Konigsberg to Bialystok in Poland, and is a junction for three branch lines serving the South Eastern district of East Prussia.

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MAGDEBURG/

MAGDEBURG (Province Saxony)

52° 10' N. 11° 40' E: 500 miles: (320,000)

Magdeburg is the largest town in the Prussian Province of Saxony, and contains heavy and general engineering works of the first order, aero-engine works, an explosives factory, and a large synthetic-oil plant. Its position on the River Elbe and on one of the main North to South trade routes of Europe has given it from the earliest times a commercial and industrial importance which it has maintained up to the present day. It is one of the principal traffic centres of Central Germany, and has a railway junction which is second only to Berlin itself with lines radiating N. to Hamburg and Rostock, E. to Berlin and the Baltic ports, S.E. to Leipzig and Czechoslovakia, S. to Halle, Nürnberg and Munich, and W. to Hanover and the Ruhr. The central German Leipzig-Magdeburg lines have been electrified. The main part of the town is on the left bank of the Elbe, and is a closely built-up area. Industries and groups of industries are situated round most of the town's perimeter. One important group is at Neustadt and Rothensee, on the northern outskirts, but the Grusonwerk of Krupps, which occupies the first place in Magdeburg's industries, is in Buckau, the southern portion of the town.

There are large marshalling and goods yards both in Rothensee and in Buckau. The Western quarter of the town, which is known as the Wilhelmstadt, and the Eastern suburb of Friedrichstadt, which is on the right bank of the Elbe, contain groups of industries. The Elbe divides into two channels, forming an island which lies between Magdeburg and Friedrichstadt. This island is itself intersected by a third narrow river channel (the Zoll Elbe) and contains an inland harbour, with warehouses and storage depots.

The Mittelland Canal follows an E.-W. course 6 miles N. of the town, but this important waterways route is broken where it should be carried over the Elbe, due to the failure to complete the aqueduct, and also by the double ship lift at Hohenwarthe a mile to the east of the aqueduct. Barges therefore have to negotiate the 40-60 ft. change in level to the river by the Rothensee shiplift, pass down the N.-S. branch canal into the Elbe, and rejoin the Ihle section of the canal by the locks at Niegripp, a distance of some 8 miles by water from the Rothensee shiplift.

The town of Schönebeck, 9 miles to the South of Magdeburg, where there are aircraft, ammunition, and chemical factories, is dealt with separately.

Transportation

Inland Harbour

Magdeburg

(2)

Magdeburg has extensive inland harbour facilities for the Elbe traffic. The Handelshafen and the Industriefafen, the two largest docks, are at the Northern end of the town close to the industrial areas of Neustadt and Rothensee. There are several smaller docks and loading basins further downstream at Rothensee and connected with the Weser-Elbe Canal by the N.-S. branch canal and the Rothensee shiplift. This is part of the Mittelland Kanal system, which is continued Eastward from the Elbe to link up with the Oder. There is a further large dock known as the Zollhafen on the island formed by the two arms of the Elbe between Magdeburg and the suburb of Friedrichstadt. Magdeburg handles up to 2 million tons of waterborne goods per annum, including grain, sugar beet, vegetables, coal and timber.

The/

MAGDEBURG (contd.)

The shiplift is situated at the top of the N.-S. branch canal close to its junction with the Mittelland canal; it can lift or lower barges up to 1,000 tons to the maximum of 60 ft. required by the level of the Elbe.

Railway Junction Magdeburg (3)

The main line from Hamburg to Halle and Saxony passes through Magdeburg from North to South. One of the principal routes from Berlin to the Lower Rhineland crosses the Elbe at Rothensee and continues westwards from Magdeburg to Brunswick. Five other important branch lines radiate from Magdeburg. The railway junctions are in the Rothensee area and to the South of the main railway station.

Marshalling Yard and Repair shops Buckau (2)

The Buckau marshalling yard is the most important in Magdeburg, and has capacity for handling 3,800 wagons per 24 hours. It extends for 2 miles to the S. of the town. There is a large loco. depot and loco repair shops which are possibly only partly active.

Marshalling Yards Rothensee (3)

These extensive marshalling yards are close to the Industriehafen and to the junction of the lines from Berlin and Hamburg. They have a capacity for 3,000 wagons per 24 hours.

Goods Station Magdeburg (3)

The main goods station, which includes a number of large storage depots, is immediately South of the main railway station in the centre of the town.

Railway Repair Shops Salbke (3)

These large and well-equipped repair shops are believed to employ some 2,500 workers, and undertake repairs and maintenance of all kinds of railway rolling stock. They are in the South Eastern suburb of Salbke, and close to the works of the R. Wolf A.G.

Public Utility Services

Power Station 'Mikramag' Rothensee (1)

This thermal power station is situated N. of the Industriehafen on the N.-S. branch canal of the Mittelland Canal. Its installed capacity is at least 130 MW and it is designed for expansion to at least 200 MW. The station supplies steam and electricity to the adjacent synthetic-oil plant referred to below under Liquid Fuels, the estimated requirements of which are 100 MW, and to the nearby electrolytic zinc works (estimated requirements 35 MW and 25 tons/hr steam), referred to below under Non-ferrous Metals. Electricity is also supplied to the city of Leipzig. One 110 kV long-distance transmission line connects to the sub-station at Buckau S. of the town, and via that sub-station to the sub-station at Diesdorf, referred to below.

Sub-station/

MAGDEBURG (contd.)

Sub-station Diesdorf (3)

This sub-station is situated 2 miles W. of Magdeburg and is probably owned by Preussenelektra. It is on the 220-kV line linking the Ruhr-Westphalian area with Berlin and is the junction point for several lines connecting to the brown-coal-field stations in the Leipzig area.

110 kV lines connect to Förderstadt, Golpa, Mikramag via Buckau, and Brandenburg.

Gasworks Rothensee (2)

The Grossgaserei Mitteldeutschland A.G., which belongs to the Deutsche Continental-Gas-gesellschaft, owns a large gasworks at Rothensee which supplies the local long-distance gas system, including the town of Magdeburg and Aschersleben, Köthen and Halberstadt. The plant has 160 ovens having an estimated dry-coal capacity of 870,000 tons per annum. The works include a tar-distillation plant. The largest of the gasholders has a capacity of 100,000 cu. m. In 1936 the works made 2,100 million cubic feet of gas.

Gasworks Magdeburg (3)

The municipal gasworks at Magdeburg buys the bulk of its gas from Rothensee, but also makes water gas on its own works. Total sales in 1936 were 1,050 million cu. ft.

Gasworks Magdeburg-Südost (-)

This small works, owned by the Gas-und Stromversorgung Magdeburg Südost A.G., buys gas for re-sale from the local grid.

Liquid Fuels

Braunkohle-Benzin A.G. Magdeburg (2)

One mile to the North-east of the Rothensee marshalling yards is the large synthetic-oil plant of the Braunkohle-Benzin A.G., operated by the Bergius process for hydrogenating brown-coal tar. These works have been much enlarged during the war, and are estimated to have attained a capacity of 250,000 tons per annum. Further expansions are still being carried out.

Oil Storage Neustadt (-)

Between the Handelshafen and the Industriebafen, and close to the Rothensee marshalling yards, are large petroleum stores. Seven large and four smaller tanks, occupying an area of some 50,000 sq. yds., are estimated to have a storage capacity for 50,000 tons. There is a smaller group of storage tanks on the Eastern side of the Industriebafen.

Non-Ferrous Metal Manufacture and Fabrication/

MAGDEBURG (contd.)

Non-Ferrous Metal Manufacture and Fabrication

G. von Giesches Erben

Rothensee

(2)

The non-ferrous metal works of Georg von Giesches Erben include a zinc smelting plant, and produce zinc alloys, sulphuric acid, and electrolytic cadmium. The output is believed to be approximately 60,000 tons of zinc, 65,000 tons of sulphuric acid, and 180 tons of electrolytic cadmium per annum. The production of this plant was originally calculated for 200,000 tons of zinc annually, with possibilities for expansion to twice this amount. Some 800 workers were employed in 1938. The principal sources of raw materials are the Georg von Giesches Bleischarley mines in Beuthen. The works have their own loading quays on the Elbe, and are adjacent to the Mikramag electric power station.

Aircraft and Aero Engines

Junkers

Rothensee

(1+)

These large aero-engine works are nearly equal in importance to the Junkers engine works at Kötten, in point of production capacity, but in addition have special departments for airscrews and fuel-injection pumps. The number of workers employed is believed to exceed 15,000, including a high proportion of foreign labour. Aero-engines of the Jumo 211 type have been the primary product of these works. Since the beginning of the war V.D.M.-type propellers have been made in considerable quantities from rough blade forgings supplied from outside. The works occupy a large area (approximately 190,000 sq. yds.) in the Neustadt quarter of the town, within half a mile of the Rothensee marshalling yards. They include the plant of the Magdeburger Werkzeugmaschinenfabrik which has for many years been a subsidiary of Junkers.

Engineering and Armaments

Krupp-Grusonwerk

Buckau

(1+)

The highly important works of the Friedrich Krupp Grusonwerk A.G. are in Buckau, the Southern quarter of Magdeburg, where they occupy an area of approximately 900,000 sq. yards. They include a large steel plant with open-hearth furnaces and Bessemer converters, foundries, forges, pressing plant, and rolling mills. They produce armour plating, bow castings for submarines, heavy anchors and chains, and specialise in drilled castings. The machine shops cover a wide range of heavy machinery - for crushing, ore dressing, grinding, cement making, etc.; cranes and conveyors are also made. According to reports the armaments produced include A.A. guns, gun mountings, and heavy naval shells. They are the main tank assembly plant for the 23-ton PZ. Kpf u. IV., being supplied with certain components by Krupp, Essen.

These/

MAGDEBURG (contd.)

These works were already employing at least 10,000 workers before the war, and it is believed that this number may now have increased to as many as 35,000. In addition to the heavy steel and engineering plant, the Grusonwerk undertake various types of lighter engineering work, and have one section which manufactures gear-wheels of all types and sizes.

Schaeffer und Budenberg

Schönebeckerstr. (2)

The Schaeffer & Budenberg G.m.b.H., whose works are in the suburb of Buckau, are important specialists in measuring instruments, gauges of all kinds, valves, pumps, injectors, and signalling installations. They employ some 1,600 workers. The works include a large steel foundry with electric arc furnaces. It is reported that this firm is now producing torpedo components, including engines and generators, gyros, and depth setting gear.

Polte

Poltestr.

(1)

The Polte Armaturen & Maschinenfabrik are in the Northern part of the town. These works have been reported as now employing more than 10,000 workers. Originally makers of S.A.A. and shells, they appear to have extended their activity to include guns of light and heavy calibre, including railway guns and new types of extreme range large-calibre guns. A variety of machine tools, valves, pipe fittings, etc., are also made.

R. Wolf A.G.

Buckau

(2)

R. Wolf A.G.

Salbke

(2)

The two separate works of the Maschinenfabrik Buckau R. Wolf A.G. are situated about half a mile apart in the Southern quarter of Magdeburg. The Buckau works normally produce complete plants and heavy machinery for briquetting works, and limestone quarrying, coal elevators, dredging plant, and similar equipment. They may also be machining and assembling gun barrels, breeches, etc.

The Salbke works specialise in peacetime in boilers, complete steam power installations, diesel engines, locomobiles, tractors and pumps. It has been reported that this firm is now largely engaged on naval work, in particular the machining and assembly of the air vessel and water bottles for air-driven torpedoes. R. Wolf are also the leading German builders of locomobiles for industrial use, and this department is reported to be having to sub-contract outside firms. Some 8,000 workers are believed to be employed at the two plants.

Otto Gruson & Co. K.G.

Buckau

(3)

This firm is a subsidiary of Maschinenfabrik Buckau Wolf A.G. It is situated between the latter firm and the Buckau marshalling yard on the opposite side of the railway to Fried. Krupp Grusonwerk. The works includes a foundry of considerable size, and supplies gears and other components for A.F.V.'s as well as structural steel. It is known to have been manufacturing mine, bomb and shell cases, bow castings for U-boats, anchors and chains.

Mundlos A.G./

MAGDEBURG (contd.)

Mundles A. G. Lubeckerstr. (3)

This firm normally makes sewing machines. The factory is in the Northern quarter of the town, and is now believed to be making small-arms and machine-gun components. Some 1,500 workers are employed.

Strube Porsestr. (3)

The Maschinen & Armaturenfabrik vorm. C. Louis Strube A. G. are general engineers. Their products include valves and injection pumps. The works are close to those of Schaeffer & Budenberg. Approximately 1,000 workers were employed before the war.

Gelbke & Jaritz Reichpräsidentenstr. (3)

This firm of coachbuilders is now believed to be an important M. T. repair works.

Chemicals and Explosives

Fahlberg & List Alt Salbke (2)

The Fahlberg & List A. G. Chemische Fabriken are makers of superphosphates and other chemical fertilisers, explosives, including refined toluol and T. N. T., saccharine, dyes, and sulphuric acid. The capacity of the sulphuric acid plant is believed to be 20,000 t. p. a. Their works are on the left bank of the Elbe in the Southern quarter of Magdeburg. Approximately 4,000 workers are reported to be employed.

Thos. Goldschmidt A. G. Magdeburg-Buckau (3)

(reported to be formerly Chem Fab. Buskau A. G.) Producers of sulphuric acid. Their output is estimated to have been 55,000 tons per annum. In 1938, 760 men were then employed.

Foodstuffs

Hubbe Farenholtz Reichpräsidentenstr. (3)

The vegetable-oil refinery of the Ver. Oelfabriken Hubbe & Farenholtz is in the suburb of Friedrichstadt on the right bank of the Elbe. There have been extensions to these premises during the war, and indications that the purpose of the oil-storage tanks may have been changed. Before the war the plant had an oilseed crushing capacity of 46,000 t. p. a.

Grain Silos Handelshafen (-)

A number of grain warehouses, with a total storage capacity of 25,000 tons, are grouped round the Handelshafen.

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MAINZ (Hesse)

MAINZ (Hesse)

50° N. 8° 15' E: 380 miles: (145,000)

Mainz is on the left bank of the Rhine opposite the junction of the River Main with the mainstream. It is on the main North to South railway line which follows the Rhine valley from Holland to Switzerland and is an important railway centre. Two main-line railway bridges cross the Rhine at Mainz and lead to Frankfort/Main and to Mannheim. The town has an inland harbour and is one of the largest transshipment centres on the Upper Rhine. The industries of Mainz include engineering, wagon building, and shipbuilding. The town is the principal centre of the Rhine wine trade and of the German champagne industry.

Transportation

Inland Harbour Mainz (3)

There are two large inland harbours at the Western end of the town and several smaller docks and quays at the junction of the Neckar with the Rhine in the suburb of Gustavsburg opposite to Mainz. The pre-war tonnage handled in the port amounted to some 2 million tons per annum, largely grain, of which Mainz handled more than any other Upper Rhine port. There are three grain silos and many warehouses in the inland dock area. A small lying-up dock for the Rhine barges is at the Eastern end of the town.

Railway Junction Mainz (3)

Three important railway lines meet in the Western part of the town. The main north to South railway along the left bank of the Rhine is here joined by the railway which crosses the Rhine by the Kaiserbrücke (the Western railway bridge) and links Mainz with the right-bank railway route, and by a branch line from Alzey and the district of Rhine Hessen. The main line crosses the Rhine to the East of the town, beyond the mouth of the River Main, by the upper railway bridge.

Marshalling Yards. Bischofsheim (3)

The outlying suburb of Bischofsheim is on the right bank of the Rhine near to the Eastern or Obere Rheinbrücke, on which the main line crosses the river. There are marshalling yards here which have a capacity of 3,200 wagons per 24 hours.

Public Utility Services/

MAINZ (contd.)

Public Utility Services

Electric Power Station Mainz (3)

The Mainz electric power station, which has a capacity of 45 MW. and is of the thermal type, is at the Western end of the town on the left bank of the Rhine.

Städt. Gaswerk Mainz
Städt. Gaswerk Mainz-Cronsheim (-)

In 1936, the two Mainz municipal gasworks purchased 810 million cubic feet of gas from the company named below, for re-sale.

Kraftwerke Mainz-Wiesbaden A. G. Mainz (3)

In 1936, this gasworks made and sold 1,310 million cubic feet of gas.

Shipbuilding

Schiffswerft Gustavsburg }
Christof Ruthof Amöneburg } (3)

The Schiffswerft & Maschinenfabrik G.m.b.H. have their works on the right bank of the Main near to its junction with the Rhine. The works of Christof Ruthof are on the right bank of the Rhine in the suburb of Amöneburg at the Northern end of the Kaiserbrücke. Both firms are builders of river craft and Ruthof is reported to make marine engines up to 2,000 h.p. and small coastal vessels.

Engineering and Armaments

M. A. N. Gustavsburg (3)

The Gustavsburg works of the Maschinenfabrik Augsburg-Nürnberg A. G. are normally engaged on heavy steel constructional work for bridges, steel buildings, lock gates, and gasholders. They are believed to employ several thousand workers. Gustavsburg is an outlying suburb on the right bank of the Rhine opposite Mainz, and immediately to the East of the junction of the Main with the Rhine. It is connected to Mainz by the Eastern railway bridge, over which the main line here crosses the river.

Waggonfabrik/

MAINZ (contd.)

Waggonfabrik Mainz (3)

The Ver. Westdeutsche Waggonfabrik A.G., of Köln-Deutz, have large railway-wagon building works in the Western quarter of Mainz close to the principal railway junction. The works were formerly known as the Gebr. Castell. Some 1,200 workers were employed here before the war.

Chemicals and Explosives.

Budenheim Budenheim (3)

The Chemische Fabrik Budenheim A.G. are makers of pharmaceuticals and chemicals for the food-preserving industry and for culinary purposes.

Werner & Mertz A.G. An der Kaiserbrücke (-)

This firm manufactures wax and turpentine products, including a well-known shoe polish. It is a firm of importance in this branch.

Rheinische Schellackbleiche Ernst Kalkhof Untere Zugel-Leimer Str. (3)

This is one of the leading German bleachers of shellac and makers of shellac wax and other shellac preparations.

Dr. Thilo & Co. Weisenauer Str. (3)

This firm is one of the principal German makers of ether and other anaesthetics.

Verein für Chemische Industrie (Degussa) Mombach (3)

This large works of the Degussa concern is largely engaged on the production of methanol, acetone, and solvents, oxalic acid, formaldehyde, cellulose acetate, etc.

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MALAPANE (Silesia)

50° 40' N. 18° 20' E: 805 miles: (1,200)

Malapane is 12 miles East of Oppeln and on the river Malapane. The only industry of importance is the plant of the VOHAG which is described below.

Iron, Steel and Ferro Alloys

VOHAG Malapane (3)

The Malapane works of the Vereinigte Oberschlesische Hüttenwerke A.G. include electric and open-hearth steel furnaces. They have an annual capacity of 50,000 tons of crude steel. Further particulars of this concern are given under the heading GLEIWITZ.

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MALCHIN/

MALCHIN (Mecklenburg)

53° 44' N. 12° 45' E: 565 miles: (7,300)

Malchin is situated on the main Rostock-Neu-Brandenburg-Stettin railway line, approximately 40 miles S.E. of Rostock. It is an important centre for the production of sugar.

Foodstuffs

Vereinigte Zuckerfabriken Malchin u. Teterow

Trocknereien u. Sagewerk Abt. Malchin G.m.b.H.

} (3)

These firms are large beet-sugar producers with a capacity to handle 40,000 quintals of beet per day each.

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MALCHOW (Mecklenburg)

53° 30' N. 12° 30' E: 530 miles: (5,000)

Malchow is 25 miles East of Neustrelitz and is a small market town. There are a few cloth factories, but before the war there was no industry of note. The large munitions works mentioned below will have largely increased the figure of 5,000 that represented the pre-war population.

Chemicals and Explosives

Dynamit A.G.

Malchow

(3)

Approximately 2 miles to the West of Malchow, in the forest known as the Stadtforst, a large shell-filling factory has been erected during the war. A hutment colony has been erected on the Western side of Malchow to accommodate the workers, the number of which has been reported to be as high as 15,000. The railway line passes through this colony to the filling factory, which is near to a lake and is well camouflaged in the woods.

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MANNHEIM (Baden)/

MANNHEIM (Baden)

49° 30' N. 8° 30' E: 400 miles: (430,000)

The twin towns of Mannheim and Ludwigshafen form an industrial centre of great importance, which lies on either side of the Rhine at the confluence of the Rhine and Neckar. Mannheim, which is itself divided by the river Neckar, lies on the Eastern and Ludwigshafen on the Western bank of the Rhine. The main railway line up the Rhine valley to Basle passes through Mannheim which is a junction for a branch leading through Heidelberg and the Neckar valley to Heilbronn and Stuttgart. To the West a railway crosses the Rhine to Ludwigshafen, Kaiserslautern and the Saar. The harbour area is chiefly concentrated on the right bank of the Rhine immediately North of Mannheim. There are three main industrial areas. The first lies to the North of Ludwigshafen and is entirely covered by the huge chemical works of the I.G. Farbenindustrie concern. These works form the largest industrial chemical complex in Germany. Opposite these works and on the right bank of the Alt-Rhine are many engineering concerns, including Daimler Benz and Brown Boveri. To the South of the City and in the suburbs of Neckarau and Rheinau are chemical and engineering plants, marshalling yards and an airport. Frankenthal, which is situated some five miles North West of Ludwigshafen, is dealt with separately.

<u>Type and Description of Target</u>	<u>Location</u>	<u>Priority Rating</u>
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Inland Port	Mannheim	(1)
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The Mannheim port area is divided into two sections which lie on either side of the Neckar in the Northern quarter of Mannheim. The Mühlau-Hafen is between the Rhine and the left bank of the Neckar and contains numerous warehouses, loading quays and rail sidings. The Industriehafen on the opposite side of the Neckar contains, beside the usual quay and loading facilities, many small industrial undertakings, including engineering concerns, oil storage plants, and grain silos. This port is the main transshipment centre on the Upper Rhine.

Inland Port	Ludwigshafen	(2)
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The inland port of Ludwigshafen on the left bank of the Rhine extends from the Southern extremity of the I.G. Farbenindustrie Works to the Northern end of the Raschig chemical plant, a total distance of three miles. This is an important transshipment centre for coal and handles a large proportion of the products of the numerous chemical factories in the twin-towns. The area includes warehouses, oil storage plants, and grain silos, and is extensively served by rail sidings.

Inland Port/

MANNHEIM (contd.)

Inland Port Rheinau (3)

The Rheinau-Hafen has nearly eight miles of docks and extensive storage and bunkering facilities. Next to the port of Karlsruhe it is the principal coal transshipment centre on the Upper Rhine.

Marshalling Yards Mannheim (2)

These important yards lie to the South East of Mannheim and have a capacity of 7,000 wagons per 24 hours.

Marshalling Yards Ludwigshafen

The yards at Ludwigshafen can handle up to 2,200 wagons per 24 hours. There is also a railway repair shop in this area.

Railway Repair Shop Schwetzingen (3)

These important railway workshops employ 1,000 workers on the repair and maintenance of goods wagons and locomotives. They are in the Southern suburb of Schwetzingen.

Public Utility Services

Elektrizitätswerk Mannheim-Neckarau (1)

Built in 1923 to replace the existing three stations at Mannheim, this thermal power station is owned by "Grosskraftwerk Mannheim A.G." and has an installed capacity of 162 MW. It is situated on the east bank of the river Rhine in the southern suburbs of Mannheim and is only 2 miles West of the two important sub-stations at Rheinau and three miles East of the sub-station at Mundenheim, being connected to both by high tension transmission lines. It is believed that it is also connected, either directly or via Mundenheim, to the nearby I.G. Farben works at Ludwigshafen-Oppau. The station has 11 turbo-generating sets, one of which is housed underground. Cooling water is taken from the river Rhine. Underground 20 kV. lines connect the station with the old Mannheim power station which now serves as a sub-station, with the two other old stations in the city with the old Rheinau station and with the Badenwerke sub-station. In addition there is a double circuit 110 kV line to Mundenheim sub-station of the Pfalzwerke and to the Rheinau sub-station of the Badenwerke.

Kraftwerk Ludwigshafen-Oppau/

MANNHEIM (contd.)

Kraftwerk Ludwigshafen-Oppau

Ludwigshafen (1)

Owned by the I.G. Farbenindustrie, this thermal power station is situated between Ludwigshafen and Oppau in the N.W. suburbs of Mannheim within the site of the I.G. chemical works. Also within the site but to the East of it on the west bank of the river Rhine is a new station, which in 1943, was still under construction. The total installed capacity is estimated at 200 MW. The old station had 6 turbo-generators and the new station is believed to have one generator with a total of 75 MW. generating capacity. The source of water for cooling is the river Rhine, the new station however, though situated close to the river, has two cooling towers. Power is supplied to the associated works, and the stations are believed to be connected with the Mannheim generating station either directly or via the Mundenheim sub-station. Half a mile N.W. of the chemical works an outdoor sub-station, apparently designed for 3 transformers each of 40 MW. capacity, is under construction. It will be connected to three high voltage lines, with the object probably of providing a means of incorporating the greater part of the electricity requirements of the works in the event of damage to the local generating plant.

Rheinau-Badenwerk

Mannheim (2)

These are two sub-stations $\frac{1}{4}$ mile apart. They are situated in the wood about 5 miles S.E. of Mannheim between the villages of Rheinau and Friedrichsfeld. The most northerly one, owned by R.W.E. consists of an open-air section with plant for 220 kV, 110 kV, and possibly lower voltages. The more southerly one, owned by the Badenwerk A.G. Karlsruhe, consists of an indoor section with plant for 110 kV and 20 kV.

From the R.W.E. station:-
two 380/220 kV double circuit lines connect to Kelsterbach and Hoheneck.

four 110 kV lines connect to Heidelberg
Neiderhausen
Neckarsteinach
Badenwerk

1 20 kV line connects along an unknown route

From the Badenwerk station:-
three 110 kV lines connect to Scheibenhardt
Schwabenheim
Mannheim P/S

Three 20 kV lines connect to Mannheim P/S
Rheinau P/S
Schwabenheim

Mundenheim/

MANHEIM (contd.)

Mundenheim Mannheim (2)

This is a sub-station situated to the West of Mannheim. Besides being connected by 100-150 KV line to the Mannheim main power station, it is connected also by a 100-150 KV line to the power station at Homburg by a northerly and southerly route, in the north via Kaiserslautern, and in the south via Speyer, Landau and Pirmasens. It is also believed to be connected with the I.G. Farben works at Ludwigshafen-Oppau.

Gaswerke Mannheim-Luzenberg (3)

In 1936 the Municipal gasworks of Mannheim produced 1,230 million cubic feet of gas. They are situated in the northern suburb of Luzenberg, directly east of the Industriehafen and approximately 2 miles North of Mannheim main station. Gas is supplied by this works to seven other towns including Heidelberg, Viernheim and Weinheim.

Iron and Steel

Stahlwerk Rheinau (3)

The Stahlwerk Mannheim A.G. iron and steel works are engaged on the manufacture of steel pressings and forgings. The Hüttenabteilung includes two basic open-hearth and one Thomas converter. In 1938 the company employed some 600 workers.

Non-ferrous Metals

Gebr. Giuliani Mundenheim

The works of this firm are situated in the Western suburb of Mundenheim. Their last known (1939) alumina capacity was 80,000 tons but it is estimated that the capacity had increased by 1943 to 90,000 tons per annum. In 1938 the company employed some 1,700 workers.

Aircraft & Aero-Engines

Schütte-Lanz Schwetzingen (3)

In the outlying suburb of Schwetzingen the Schütte-Lanz Holzwerke have a plywood factory which is reported to be making frames and components for trainer aircraft.

Shipbuilding

Schiffs & Maschinenbau A.G. Mannheim (3)

Reconnaissance photographs show that this small shipbuilding yard is now mainly engaged on the building of tank landing craft. In January 1944 at least three and possibly ten T.L.C. were building on the slips.

Engineering and Armaments

MANNHEIM (contd.)

Engineering and Armaments

Brown Boveri Käfertal (1)

The engineering concern of Brown Boveri & Co. A.G. have their main German factory in the North Eastern suburb of Käfertal. This plant manufactures electric motors and other electrical installations for submarines, and was reported to employ some 2,000 workers in 1942. The works is also one of the leading German makers of transformers, turbines and other plant for power stations, as well as electrical steam and air compressors and a variety of other electrical equipment.

Heinrich Lanz A.G. Mannheim (1)

Heinrich Lanz A.G. have their main works in Mannheim and a branch factory in Zweibrücken. They are believed to employ some 8,000 workers and manufacture tractors (known as the "Bulldog") A.F.V.'s and tank components, (possibly complete tanks) on a considerable scale. Prior to the war Lanz was the principal German maker of heavy agricultural machinery and it is believed that certain parts of the Mannheim works are still engaged on this activity.

Joseph Vögele A.G. Mannheim (2)

This company produces tank components, M.V. and tractor parts and various types of machinery for the chemical and food industries. In 1938 the factory employed approximately 1,000 workers but ground reports suggest that this figure had trebled by 1942.

Gebr. Sülzer A.G. Ludwigshafen (2)

This is a subsidiary company of the Sülzer concern of Switzerland. It is believed to employ about 1,000 workers on the manufacture of Diesel engines for use in naval vessels.

Motorenwerke Mannheim Waldhof (2)

The Motorenwerke Mannheim A.G. is situated in the North Eastern suburb of Waldhof. It has been reported to be engaged exclusively on the building of Diesel engines for submarines, and is believed to have employed some 1,500 workers in 1941.

Daimler Benz A.G. Waldhof (1)

The Daimler Benz concern, the parent works of which are in Stuttgart-Untertürkheim, have a large branch factory in Mannheim. The Mannheim plant is believed to be engaged mainly on the manufacture of light army cars, A.F.V.'s, Diesel engines for heavy military transport, and a variety of motor transport components. In 1938 this branch employed nearly 10,000 workers.

Bopp & Reuter/

MANNHEIM (contd.)

Bopp & Reuter Waldhof (2)

The Bopp & Reuter G.m.b.H. are mainly engaged on the manufacture of valves and gauges, control and measuring instruments, flow meters, etc. and according to ground reports employed some 2,000 workers in 1938.

Hommelwerke G.m.b.H. Waldhof (2)

This plant is adjacent to the Brown Boveri works, and makes a wide range of precision tools and instruments on a large scale. Prior to the war this factory employed more than 1,000 workers.

Neidig Söhne Industriehafen (3)

Franz August Neidig Söhne manufacture pumps for use in submarines and other naval craft. In 1937 the company employed some 400 workers.

Stotz-Kontakt G.m.b.H. Neckarau (3)

This is a subsidiary company of the Brown Boveri concern. It is making electric equipment for aircraft and submarines.

Chemicals and Explosives

I.G. Farbenindustrie A.G. Ludwigshafen- (1+)
Oppau

From the Northern end of Ludwigshafen railway station and stretching for some three miles along the left bank of the Rhine as far as the small village of Oppau, is the largest and probably most important of all the German chemical works. It was formerly known as the Badische Anilin- & Soda Fabrik but is now a part of the great I.G. Farbenindustrie concern. Among its principal products are chlorsulphonic acid which is believed to be produced at a rate of 90,000 t.p.a., or 75% of the total German output; opannol, for which it is the largest German producer; sulphuric acid and oleum, made here at a rate of about 300,000 t.p.a. or 15% of the total estimated German output in 1943; ammonia, for which the plant has a capacity of 180,000 t.p.a. of which a considerable amount is converted to ammonium nitrate for explosives; dyestuffs made at a rate of approximately 15,000 t.p.a. or 30-35% of the estimated total German output; furthermore the Ludwigshafen/Oppau works accounts for a considerable proportion of the total German production of other heavy and miscellaneous chemicals.

In the course of the war a very large new plant (or group of plants) has been erected between what were formerly known as the Ludwigshafen works and the Oppau works. It is believed that a large part of the new works is engaged on the production of Buna.

Buckau A.G./

MANNHEIM (contd.)

Buckau A. G. Rheinau (3)

The Chemische Fabrik Buckau A. G. in the Eastern suburb of Rheinau employs some 700 workers on the manufacture of explosives, toxic acid, metallic salts, and sulphuric acid, of which the plant is reported to have a yearly output of 20,000 tons. This is a subsidiary company of the Theodore Goldschmidt A. G. of Essen.

Rheinische Gummi- & Celluliod Fabrik Neckarau (3)

This very large works is owned by the Dynamit A. G. and the Westfälisch-Anhaltische Sprengstoff A. G. Before the war it was mainly engaged on the production of celluliod and cellulose and the manufacture of celluliod and rubber goods such as combs, toys, decorative ware etc. The plant is reported to be fully active but its present range of products is not known.

Strebelwerk G. m. b. H. Mannheim (3)

Prior to the war this firm specialized in the manufacture of boilers and radiators etc. and employed about 1,000 workers. It is now believed to be mainly engaged on the manufacture of hand grenades, and anti-tank and anti-personnel mines. The Strebelwerk operate a total of four factories in Mannheim situated at Hansa Str., Franzosen Str., Hombusch Str. and Diffene Str.

Süddeutsche Kabelwerke (a) Rhenaina Str. } (3)
(b) Waldhof Str. } (3)

These cable works are a subsidiary of the V. D. M. company and make electric cables on a fairly large scale.

Carl Platz G. m. b. H. Schanz Str. (3)

This firm employed some 400 workers in 1939 on the manufacture of machine tools.

Kali-Chemie A. G. Wohlgelegen (3)

This large chemical undertaking has its headquarters in Berlin and branch factories in many parts of Germany. The Mannheim works are situated in the North Eastern suburb of Wohlgelegen, and manufacture sulphuric acid, nitric acid, accumulator acid, hydrochloric acid, and other similar types of chemicals.

Zellstoff Fabrik/

MANNHEIM (contd.)

Zellstoff Fabrik Waldhof (2)

The Zellstoff Fabrik Waldhof A.G. is situated in the North Eastern suburb of Waldhof, and formerly manufactured chemical pulp, tanning extract and sulphite alcohol. The company has branch factories in Prussia, Bavaria and Silesia, and in all its plants employed in 1938 a total of some 14,000 workers.

Knoll A.G. Ludwigshafen (2)

Cardiazol. This is the product for which Knoll is most famous. It is from cyclohexanone purchased from the I.G. Farbenindustrie.

Opiates. Knoll do not produce plant extracts but purchase morphine, codeine, etc.

Diuretics

Barbiturates

Tenalbin

Ioethiol

In general Knoll specialised in pharmaceutical products which were not produced from basic raw materials, but from purchased intermediaries. For this reason, the importance of the factory was very much greater than was indicated by the number of workers. Total personnel, including clerical staff and packers, was 800. It is not known precisely what proportion of the manufacture was destined for export, but it has been estimated that it was more than 50%. A large proportion of the export trade was with South America.

A certain amount of the products was marketed direct to hospitals, doctors, etc., but there were branch establishments at Berlin and Munich for the purpose of warehousing and propaganda.

Deutsche Bergin A.G. Rheinau (-)

The Deutsche Bergin A.G. für Holz-Hydrolyse have their main works in Heidelberg. The Rheinau branch employed 150 workers in 1938 on the manufacture of wood alcohol, yeast, and wood sugar, of which the annual capacity is reported to be 6,000 tons.

Sunlicht A.G. Rheinau

This soap factory, which formerly belonged to the Unilever concern, employed 1,900 workers in 1938.

Foodstuffs

Mannheim is one of the principal flour milling and grain distribution centres in Germany and although a certain amount of de centralization has taken place, it is believed that a large proportion of the undamaged milling installations and storage facilities are still being utilized. Ground reports suggest the Ludwigshafener Walzmühle which is one of the largest flour mills in Germany is still active.

Verein Deutscher Oelfabriken/

M A N S F E L D (Saxony)
See under Eisleben

M A R B U R G (Hesse Nassau)

50° 50' N. 8° 45' E: 390 miles: (29,000)

Marburg is on the main line from Kassel to Frankfurt/Main, approximately halfway between the two. It is a university town. Its activities are connected mainly with agriculture: but in addition to several small industries, including the manufacture of wallpaper, there is an important chemical plant, which is mentioned below.

Transportation

Railway Repair Shops Marburg (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

Chemicals and Explosives

I. G. Farbenindustrie Marburg (2)

The "Behring Werke" of the I. G. Farben combine are in the suburb of Marbach on the Northern outskirts of the town. These works are among the leading makers of serums and produce in addition pharmaceuticals and medical products, as well as dyes and heavy chemicals.

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M A R I E N B U R G (East Prussia)

54° 02' N. 19° 02' E: 820 miles: (27,000)

Marienburg is in the extreme West of the province of East Prussia close to the border of the former Danziger Freistaat, and is on the main line from Northern Germany to Königsberg, forming a junction with a branch line leading to Danzig. It is on the river Nogat, which is a tributary of the Vistula, and navigable for small craft. In peacetime there were no industries of great importance, and the town was mainly an agricultural centre. Since the war, however, a Focke-Wulf aircraft works has been erected near the town. These works are mentioned below.

Aircraft and Aero Engines

Focke-Wulf Königsdorf (1)

These highly important aircraft works were erected probably in 1941-42 as a result of the decision by Focke-Wulf to transfer aircraft assembly from Bremen to what then seemed to be less vulnerable areas in the East. They were built as an assembly plant fed by components from Cottbus, Posen and Kresinki. The works are solely engaged on the assembly of the FW-190 single engine fighter. The works are at the village of Königsdorf, 4 miles East of Marienburg; and one mile South of the Marienburg-Elbing highway. Up to August 1943 the plant was still in process of expansion, and more than 1,000 workers, including P's/W were engaged on the excavations.

MECHERNICH (contd.)

estimated to be not less than 10,000 metric tons crude and 10,000 metric tons refined lead respectively. The company have a plant for the production of sulphuric acid, with an estimated output for 1937 of 3,000 tons of 100% acid, rising to 3,600 tons in 1938, and an estimated production of sulphur trioxide of 2,600 tons per annum.

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M E E R A N E (Saxony)

50° 50' N. 12° 30' E: 550 miles: (26,000)

Meerane is 25 miles West of Chemnitz. There is a considerable textile industry which is in the hands of a number of small firms. There are several spinning mills, an example of which is mentioned below, and a number of weaving factories producing sailcloth and wearing apparel.

Textiles, Rayon, Pulp and Paper

Kammgarnspinnerei Wilh. Wunderlichstr. (-)

The Kammgarnspinnerei Meerane A.G. have a spinning mill with 35,000 spindles, which employed some 400 workers in 1938.

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M E I N I N G E N (Thuringia)

50° 35' N. 10° 25' E: 460 miles: (20,000)

Meiningen is in the Western area of the Thüringer Wald on a branch railway which leads Southwards from Eisenach to Coburg. Apart from the railway repair shops, there are in peacetime no industries of importance. It has been reported however that the Humboldt-Deutz concern have erected a factory here since the outbreak of war.

Transportation

Railway Repair Shops Meiningen (3)

These repair shops are believed to employ some 2,300 workers and repair locomotives and all kinds of rolling stock.

Engineering and Armaments

Klöckner-Humboldt-Deutz Meiningen (-)

It was reported in 1942 that the Klöckner-Humboldt-Deutz Motoren-Werke A.G. of K8ln had erected a new factory in 1941 near Meiningen, to which part of their tank and motor vehicle production was said to have been transferred. The reports put the number of workers employed in Meiningen as high as 13,000, an improbable figure for a works in this town.

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M E I S S E N (Saxony)

51° 10' N. 13° 30' E: 590 miles: (47,000)

Meissen is on the River Elbe 10 miles North-west of Dresden. The main industry in peacetime is the manufacture of Meissener (or Dresden) china. The works of the Staatliche Porzellan Manufaktur are in the town, and the pits from which the special china clay is obtained are in the neighbourhood. There are various other porcelain and stoneware manufacturers, and subsidiary factories making colours and dyes for the ceramic industry. Insulators and similar technical stoneware are also among the town's products. Meissen has a number of textile mills, engineering works, and metalware factories, but apart from those mentioned below none is of importance.

Engineering and Armaments.

Zünder Kabelwerke Meissen (3)

The Ver. Zünder & Kabelwerke A.G. are makers of detonators and fuses, electric fuses, and insulated cables. They have two factories in Meissen, a third in Siebenlehn, 10 miles to the South-west, and a fourth in Lage, near Detmold. They employed some 2,000 workers before the war.

Elektrowärme Sörnewitz (3)

The Siemens Elektrowärme G.m.b.H. are makers of electric heating apparatus and drying chambers for both industrial and domestic purposes. In 1938 some 800 workers were employed.

Imperial Hainstr. (-)

The Maschinenfabrik Imperial G.m.b.H. are makers of filters and drying apparatus.

-----oO-----

M E L L E (Hanover)

52° 12' N 8° 20' E. 365 miles: (5,400)

Melle lies 12 miles East of Osnabrück, on the Osnabrück-Minden railway line.

Chemicals and Explosives.

O. Holtmeyer & Co. Melle (-)

This firm makes sulphuric acid. Their production of 100% acid, is estimated to have been about 7,000 tons in 1937.

Rubber and Tyres.

Melle Gummiwarenfabrik G.m.b.H. Melle (-)

This firm formerly employed 200 workers on mechanical products; they are now probably making fuel tanks, before the war they were associated with Melos K.G.

Melos K.G. Karl Bösch

Melle (-)

This firm are producers of reclaim. Their pre-war capacity amounted to 150 tons per month.

MEMMINGEN (Bavaria)

48° N. 10° 10' E: 520 miles: (17,000)

Memmingen is in the South-western area of Bavaria, 25 miles South of Ulm, and on a railway leading from Ulm to Kempten. It is the market town for the surrounding agricultural district, in particular for the dairy industry of the Northern part of the Bavarian Allgau. There are several small textile factories making hosiery and knitted goods, but no industry of importance.

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M E N D E N (Westphalia)

51° 25' N. 7° 50' E: 340 miles: (17,000)

Menden is 12 miles South of Hamm and is a tourist centre for the Northern part of the hilly district known as the Sauerland. There is a considerable metal industry, which is in the hands of numerous small firms and workshops, and produces all kinds of small metal goods, such as brassware, harness buckles, small bicycle fittings, and similar articles. None of the factories is individually of importance.

-----oO-----

MERSEBURG (Province Saxony)

51° 20' N. 12° E: 520 miles: (45,000)

Merseburg is 10 miles South of Halle on the main railway line from Berlin to Erfurt and Frankfurt/Main. The town's chief importance is due to the Leuna Werke of the I.G. Farben concern, a synthetic-oil and chemical plant which is of the highest value to the German war effort. These works, which are situated near to the village of Leuna, one mile South of Merseburg, are described below. The industries of the town of Merseburg itself include paper and cardboard manufacture and a few engineering works, none of which is individually of importance.

Transportation

Marshalling Yard

Merseburg (3)

The marshalling yard has a capacity of 2,000 wagons per 24 hours.

Public Utility Services

Electric Power Station

Leuna

(1)

This thermal generating station forms part of the Leuna Werke referred to below under Liquid Fuels. It is situated in the centre of the works and has an installed capacity of 150 MW. There is a single generator house but a group of buildings under construction to the South of the site is believed to be for a new generating station which will have an estimated installed capacity of 100 MW. There is an

METTMANN (contd.)

Engineering and Armaments

W. Seibel Mettmann (-)

The Mettmanner Britannia Warenfabrik W. Seibel are manufacturers of steel, stainless steel, aluminium and nickel-plated cutlery.

Freudewald Mettmann (-)

The Barmer Waagenfabrik C. August Freudewald is one of a number of firms in Mettmann specialising in weighing machines and kitchen utensils.

-----oO-----

MEUSELWITZ (Thuringia)

51° 02' N. 12° 17' E: 540 miles: (10,600)

Meuselwitz is a town 8 miles East of Zeitz and West of Altenburg.

Rubber and Tyres.

Heymer-Pilz Sohne Meuselwitz (3)

This firm specialises in reclaim and solid tyres and mechanicals. They produced various kinds of rubber goods such as hose and belting, and also produced possibly 1,800 tons of reclaim per annum for sale to rubber factories in addition to their own needs.

M I N D E N (Westphalia)

52° 15' N. 8° 55' E: 390 miles: (29,000)

Minden is on the main railway line from Berlin via Hannover to Western Germany. It lies on the left bank of the Weser two miles downstream from the Porta Westfalica, the narrow gap in the hills which divide Westphalia from the North German plain. The Mittellandkanal crosses the Weser at Minden. The town has a variety of industries (most of the factories being individually small), including lead-pipe making, furniture, industrial porcelain and stoneware products, and clothing and uniform manufacture. The most important industry in Minden is now the aeroplane works mentioned below.

Transportation

Inland Harbour Minden (2)

The important junction of the river Weser and the Mittelland Canal is in the North quarter of the town, and consists of a system of locks, a pumping station, the aqueduct carrying the canal over the river, and the inland harbour. The locks overcome a 46 ft. head between the canal and the river. The Canal is the link between the Rhine, Weser and Elbe and is the main artery of the German inland waterways system. The level of the canal is maintained by water pumped from the Weser at Minden. Minden is an important

MINDEN (contd.)

transit centre for grain. Grain from Hanover is shipped down the Weser to Bremen or by the Mittelland Canal to the Rhine via the Dortmund-Ems Canal.

Aircraft and Aero Engines

Peschke Minden (3)

The Peschke Flugzeugwerkstätten G.m.b.H. are aircraft-repair shops. These works appear to have been expanded, and it is possible that they are now making some aircraft components on the spot. The works are in the Northern part of Minden near to the inland harbour.

Engineering and Armaments

Schütte A.G. Minden (3)

The Schütte A.G. für Tonindustrie employed some 900 workers in 1939 and are makers of porcelain and stoneware products for building, drainage, and industrial purposes.

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MITTWEIDA (Saxony)

51° N. 13' E: 570 miles: (19,000)

Mittweida is 12 miles North of Chemnitz on the River Zschopau, which has been dammed a few miles North of the town to form a large reservoir. This is one of several such reservoirs on which the industrial towns of Saxony (where there is little ground water) depend for their water supply. Textiles form the main industry of Mittweida, and there are several spinning, weaving, and shirt-making factories, of which an example is mentioned below. There are also a number of small engineering works.

Weissthaler Bahnhofstr. (-)

The Weissthaler Spinnerei A.G. are cotton spinners and weavers and employed some 400 workers in 1937.

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M O E R S (Rhineland)

51° 25' N. 6° 35' E: 250 miles: (30,000)

Moers is 4 miles from the left bank of the Rhine at Homberg, opposite Duisburg. The population is mainly engaged in coal mining. There is a large colliery and a synthetic-oil plant to the East of Moers, which are described under the heading Homberg, and another colliery, which is mentioned below, at Neukirchen, 3 miles to the West of Moers. Other industries of the town, which include a few engineering works, are not important.

Solid Fuels

Niederrheinische Bergwerks A.G. Neukirchen (-)

The coal mine of the Niederrheinische Bergwerks A.G. has one pithead, and produced 600,000 tons of coal in 1937. 1,300 workers were then employed.

M Ö H N E D A M

See under SOEST.

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M O S B A C H (Baden)

49° 21' N. 09° 08' E: 440 miles: (5,500)

Mosbach is a town some 12 miles South-east of Eberbach and 16 miles North of Heilbronn, on the railway line Würzburg-Heilbronn, in the valley of the Neckar. It is an old town with mediaeval associations and buildings.

Engineering and Armaments

Gmeinder & Co.

Mosbach

(-)

Gmeinder & Co. G.m.b.H. were among the earliest manufacturers of narrow-gauge diesel locomotives for mining and agricultural work. Since the outbreak of war this type of loco has been almost entirely abandoned except for export purposes and details of the present activities of the firm are not known.

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MÜHL DORF (Bavaria)

48° 15' N. 12° 35' E: 620 miles: (8,000)

Mühdorf is on the River Inn close to the former Austrian border and on the railway line from Munich via Braunau to Austria. A number of important industrial undertakings is grouped in the neighbourhood of this town. The VAWAG have an aluminium works 6 miles to the East in the small village of Töging. The administrative headquarters of these works are in Mühdorf itself. The pre-war population as given above has probably been increased owing to the expansion of these works. There is an explosives works at Kraiburg, 6 miles to the South-west, and further upstream on the River Inn. The works, described below, is one of a number of chemical and explosives factories dispersed over this part of Bavaria. Others are dealt with under the headings Altötting, Burghausen, and Trostberg. Five miles to the South-east of Mühdorf, at the village of Steiner am Hart, on a branch railway leading to Trostberg, there is a large calcium carbide and cyanamide works.

The stretch of the River Inn between Wasserburg and Töging, a distance of 25 miles, is utilised for an important hydro-electric scheme.

Public Utility Services

Inn-Alz Hydro Scheme Töging (1)

Töging, which is 3 miles East of Mühdorf, contains the largest of a chain of four hydro electric stations, which utilise the water power of the River Inn, and supply electricity to the group of electro-chemical and metallurgical plants situated in this area. This hydro scheme works in conjunction with the generating stations along the valley of the River Alz, a tributary of the Inn. The Alz stations are dealt with separately under the heading Trostberg. These stations along the Inn valley extend from Wasserburg, 20 miles upstream and South-west of Mühdorf, to Töging, and include generating stations at Wasserburg (65MW), Teufelsbruck (65MW), Gars (65MW), and Töging (97MW). A lateral canal 15 miles long has been cut parallel with the river from Jettenbach to Töging.

Non-Ferrous Metal Manufacture and Fabrication

VAWAG Töging (1)

The works of the Ver. Aluminium Werke A.G. is situated at Töging, 3 miles to the East of Mühdorf. The administrative offices are in Mühdorf. The estimated capacity of the plant is 40,000 tons of aluminium per annum. In 1943 some 12,000 workers were reported to be employed.

MÜHLDORF (continued)

Chemicals and Explosives

Explosives Factory Kraiburg (2)

This factory has been built during the present war, and there is no reliable information regarding its ownership or its exact location. No photographic cover of the factory exists. Reports state that it is engaged on the manufacture of propellant-powder, both in the form of square flakes and rods. It is stated that between 18,000 and 20,000 workers were employed in 1942, and that the labour force has subsequently been increased to 40,000. It is probable that the latter figure is somewhat exaggerated, but there seems considerable evidence of the existence here of a very large propellant-powder plant, of which the capacity may be upwards of 30,000 tons of finished powder per annum

Bayerische Kraftwerke A.G. Steiner am Hart (3)

A large calcium carbide and cyanamide works, which works in conjunction with the similar works at Tacherting near Trostberg, is situated at the village of Steiner am Hart, 5 miles South-east of Mühlendorf. This company, which was concerned with the development of the hydro-electric scheme mentioned above, took over the carbide plant at Steiner am Hart from the Bayerische Stickstoffwerke. Production figures are not available.

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MÜHLHAUSEN (Province Saxony)

51° 15' N. 10° 25' E: 460 miles: (40,000)

Mühlhausen is a market town 30 miles North-west of Erfurt, on the Northern edge of the Thüringer Wald. There are several small spinning and weaving mills, leather-goods factories, and a number of makers of machinery, chiefly knitting machines for use in the textile industry. None is individually of importance.

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MÜLHEIM/Ruhr (Rhineland)

51° 25' N. 6° 55' E; 304 miles: (136,000)

Mülheim is situated on both sides of the river Ruhr, and the area considered here is approximately the administrative district of Mülheim. It should not be confused with Mülheim, a suburb of Cologne.

There are important marshalling yards which lie on the lines to Dortmund, Bochum, and Essen, and an adjoining locomotive-repair shop. North of the railway station lies an important industrial concentration containing two steelworks, the Thyssen works and the Friedrich Wilhelmshütte, and also the large engineering works of Siemens-Schuckert.

The river Ruhr is navigable by ordinary barges to about one mile beyond Mülheim, but by smaller barges up to Witten.

Transportation

Marshalling Yards Speldorf (3)

The yards are situated on the West bank of the river Ruhr, 1 mile West of Mülheim station. The capacity of the yards is 3,000 wagons per 24 hours and, before the war, were being used to 40% of their capacity.

The importance of the yards is attributable to their position on one of the principal lines from the great industrial cities of Dortmund, Bochum, and Essen. Though only of moderate size they are compact and moreover deal with traffic passing over some of the most important lines in the area.

Railway Repair Shops Speldorf (3)

The repair shops, including two round-houses, are situated 1 mile West of Mülheim main station, immediately South of the marshalling yards. These are the only shops in the Reichsbahn-Direktion Essen which deal exclusively with the repair of steam locomotives. 1,600 workers were employed here before the war.

Public Utility Services

Municipal Gas Works Mülheim (3)

The works are situated $1\frac{1}{4}$ miles North East of the main station and obtain their supplies from the Ruhr gas grid. 335 million cubic feet of gas were bought and sold in 1937.

MÜLHEIM (contd.)

Solid Fuels

Friedrich Wilhelm Mülheim (3)

Owned by Deutsche Eisenwerke A.G. the coking plant Friedrich Wilhelm is situated within the steelworks complex, $\frac{3}{4}$ m. North-west of Mülheim station. There are 80 ovens having an estimated annual dry coal capacity of 182,000 tons. Coal is obtained from local sources.

Rosenblumendelle & Wiesche collieries Heissen (3)

Owned by Mülheimer Bergwerke A.G. (Hugo Stinnes) the collieries are situated about 3 miles E.N.E. of Mülheim station and about $\frac{1}{4}$ mile South-East of Heissen station. The combined output of the two collieries was 1,112,000 tons of hard coal in 1937. They have their own power station with an estimated capacity of 12 MW.

Kaiser Wilhelm Institut für Kohlenforschung Mülheim

Mülheim is distinguished by the presence there of the K.W.I. für Kohlenforschung, until recently directed by Prof. Fr. Fischer. The most notable achievement of this highly-important research establishment has been the development of the various synthetic processes known collectively under the name of Fischer-Tropsch.

Iron and Steel and Ferro-alloys

Stahl-und Walzwerke, Thyssen Mülheim (2)

Owned by the Deutsche Röhrenwerke A.G. group of Vereinigte Stahlwerke A.G., this works is situated immediately North-East of the Friedrich Wilhelmshütte and 1 mile North-East of Mülheim main station. There are 11 open-hearth furnaces having an estimated annual crude-steel capacity of 200,000 tons. In addition to the usual range of products, the works specialises in boilers, and is also engaged in sheet welding and zinc working. Some 10,000 workers are said to be employed. The works has its own power station with a capacity of 12 MW.

MÜLHEIM (contd.)

Friedrich Wilhelmshütte

Mülheim

(3)

Owned by the Deutsche Eisenwerke A.G. group of Vereinigte Stahlwerke A.G., the works is situated half-a-mile North-west of Mülheim main station on the northern bank of the river Ruhr. There are 4 blast furnaces with an estimated annual capacity of 350,000 tons of pig iron. The firm specialises in engine castings. For details of the coking plant see under "Solid Fuels". Combined with the Schalker Verein works at Gelsenkirchen, the estimated capacity of blast-furnace cement in 1939 was 600,000 tons. The works has its own power station with a capacity of 13 MW.

Engineering and Armaments

Siemens Schuckertwerke A.G.

Mülheim

(3)

Situated half a mile W.N.W. of Mülheim main station, the works covers an area of 860,000 sq. ft. It was one of the principal manufacturers of steam turbines for driving generators and produced approx. 38% of the total German output in 1937. Generators, turbo-pumps and condenser units were also made. There is some doubt as to the present rate and type of activity at this works and it is believed that it may be partly inactive.

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MÜLHEIM (Rhineland)

This, an Eastern suburb of Cologne, is described under "Köln am Rhein (Cologne)". It should not be confused with Mülheim, a town of 136,000 inhabitants in the Ruhr, which is described above.

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MÜNCHEN (Munich) Bavaria

48° 10' N. 11° 35' E: 570 miles: (825,000)

Munich (München) is the largest city in Bavaria and the fourth largest in Germany. Prior to 1933 it was the seat of the Bavarian Government. Munich is the birthplace of the Nazi Movement and has become the headquarters of the Nazi Party.

The city is in the Bavarian highlands, and is 1,700 feet above sea level. It lies to the North of the foothills of the Bavarian Alps, and is on the River Isar. Munich is the centre of an important network of railways and has direct connection with France (through Strassburg), with Austria (through Rosenheim), and with Italy (through Innsbruck and the Brenner Pass).

Munich was the residence of the Kings of Bavaria. It is a university town, and a cultural centre of European importance. Traditionally the city has long been celebrated for artistic handicrafts, including bronze founding, glass staining, silversmith's work, and wood carving, in addition to the manufacture of astronomical and mathematical instruments. During the present century a big development of Munich's engineering industry has taken place, and there are now several large works, which are of the highest value to Germany's war production, making railway locomotives, aircraft and other engines, chemicals, and rubber tyres. The larger of these firms are mentioned below, including the B.M.W. aero-engine works and the four plants now established in Munich by the Dornier concern. In addition to these, there are reports of further new aircraft and aero-engine factories having been opened in the Munich area by Messerschmitt and Daimler-Benz.

Also included in the Munich area are the Oberwiesenfeld airfield district North-west of Munich (where the B.M.W. and other works are situated), the suburbs of Moosach to the North East, Pasing to the West and Höllriegelskreuth which lies about 5 miles South of Munich. Wolfratshausen, 18 miles South of Munich, where there is a large explosives factory and a reported new Dornier plant, is described under its own heading.

Transportation

Railway Centre

Munich

(2)

Munich is a focal point in the German railway system. The terminal railway station is situated on the Western side of the city centre. Direct trunk lines radiate to the North and North-west Germany via Nürnberg; to North-eastern Germany and to Czechoslovakia; to Vienna via Braunau and via Salzburg; to the South via Rosenheim and also via Mittenwald to Innsbruck and the Brenner Pass; South westwards to Lindau, Friedrichshafen and Switzerland; and to the West via Augsburg to the Upper Rhine Valley and Strassburg. Several minor branch lines lead Southward from Munich and serve the Upper Bavarian highlands. The main station is fully electrified, as are all but one of the main lines that radiate from Munich.

MÜNCHEN (contd.)

Marshalling Yards Munich (3)

The chief marshalling yards lie to the West of the main railway station and had in 1938 a capacity for handling 3,000 wagons per 24 hours. The yard is fully electrified.

Goods Yards Munich (3)

In addition to the large goods station adjoining the main passenger station, there are also goods yards with extensive storage facilities adjacent to the three suburban stations; München-Nord, München-Ost and München-Süd.

Marshalling Yards München (Ost) (3)

These yards, which lie to the East of the town, had a capacity for handling 2,000 wagons per 24 hours in 1938.

Railway Repair Shops Freimann (1)

These are extensive railway-repair shops which undertake the repair of main-line locomotives, Diesel and electric locomotives, goods wagons, heavy trucks, and trailers. Some 4,600 workers are believed to be employed. The shops are situated in the suburb of Freimann 3 miles North of the city centre, and are believed to be the largest of their kind in Southern Germany.

Railway Repair Shops Neuaubing (3)

The railway workshops at Neuaubing 4 miles West of Munich are situated immediately to the West of the Dornier plant mentioned below. They undertake the repair of passenger coaches and goods wagons and employ some 2,500 workers.

Railway Repair Shops Munich (3)

These are medium-sized repair shops situated immediately to the West of the main railway station.

Public Utility Services

Power Station Isartal (2)

This thermal power station is situated between the Isartal Strasse and the Schäftlarnstrasse in the South of Munich. The installed capacity is 85 MW but the final capacity of the station is planned to be 100 MW. The station is believed to be connected to other stations owned by the Munich Corporation. A substation is attached and connects the power station with the Ampenwerke A.G. and the Bayernwerke A.G. grids.

MÜNCHEN (contd.)

Hydro Scheme	Middle Isar	} (1)
Hydro Scheme	Uppenborn	

These electric power systems utilise the water power of the River Isar and consist of two groups of hydro-electric power stations situated to the North-east of Munich. Two diversionary canals are used. Seven miles North-east of Munich the Isar is diverted into a large reservoir from which a canal has been cut to rejoin the river 18 miles to the North near Moosburg. The four power stations of this (the Middle Isar) group are at Finsing where the canal leaves the reservoir at Aufkirchen, at Eitting, and at Pfrombach. The capacities of these stations are 11, 36, 32, and 28 MW. respectively. Between Munich and Moosburg the Isar has a course of 32 miles and gives a 290' head to this group of stations. The annual electrical output of the Middle Isar group is nearly 500 million kWh and is supplied in approximately equal parts to the State Railways and the city of Munich. From Moosburg to Landsmit the canal is continued close to the right bank along a 15-mile stretch of the river, giving a head of 60'. This second and smaller group of power stations, known as the Uppenborn group, includes the old Uppenborn station of 8 MW., the new Uppenborn I of 28 MW. and the new Uppenborn II of 18 MW.

Gasworks	Munich	(3)
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In 1936 the municipal gasworks of Munich made 2,100 million cu.ft. of coal gas and bought a further 100 million cu. ft. of sewage gas from the municipal sewage plant at Grosslappen.

Non-Ferrous Metal Manufacture and Fabrication

Bayerisches Leichtmetall Werk	Neu Freimann	(2)
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The Bayerisches Leichtmetall Werk E. Heymann & H. Kayser produce aluminium castings and pressings etc. They are believed to be important suppliers of light-metal castings, pressings etc., to the German aircraft industry.

Vorderstermann & Steitz	Dachauerstr.	(3)
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This firm has an aluminium and silumin foundry and produces aluminium castings and pressings on a medium scale.

MÜNCHEN (contd.)

Aircraft and Aero Engines

(1)

B.M.W.

Oberwiesenfeld (1)

The main works of the Bayerische Motoren-Werke A.G. are to the North of Munich close to the Oberwiesenfeld airfield. In 1942 some 5,000 workers were employed in this plant. In addition to the manufacture of aero-engines, these works also construct motorcycle combinations and various types of military transport. (See also below under Engineering & Armaments).

The aero-engine section manufactures the 14-cylinder radial B.M.W.-801 aero-engine on a considerable scale. There is also still some production of the 9-cylinder B.M.W.-132. Research work on new types of engines is also carried out at the Oberwiesenfeld factory. The plant operates in conjunction with the works at Allach from which it receives a proportion of its components.

B.M.W.

Allach

(1)

The B.M.W. plant at Allach was erected in 1941 and was designed to undertake the chief part of the serial production of aero-engines for this concern. The capacity was planned to reach 1,000 aero-engines per month, but nothing like this rate of output has ever been achieved and it is now believed that the works is largely engaged on the manufacture of aero-engine components for its own requirements and for supply to other B.M.W. factories. Seven thousand workers are believed to be employed at this plant which also includes a large aero-engine repair department.

Dornier (Assembly)

Oberpfaffenhofen(2)

Dornier (Repairs)

Oberpfaffenhofen(3)

Dornier

Neu Aubing (2)

The chief Dornier assembly plant is on the Northern and Eastern sides of the airfield at Oberpfaffenhofen, 6 miles West of Munich. It is reported to employ some 5,000 workers, and assemble the Do.217. A second Dornier factory in Oberpfaffenhofen is engaged entirely on repair work.

The Dornier factory at Neu Aubing constructs major aircraft components, mainly fuselages and wings, which are supplied to the Oberpfaffenhofen works for assembly. Neu Aubing is 5 miles to the West of Munich. The Dornier factory is situated East of the Neu Aubing railway repair shops.

MÜNCHEN (contd.)

F.F.I.

Oberpfaffenhofen (3)

The Flugfunkforschungsinstitut occupies the group of buildings on the western boundary of the Oberpfaffenhofen airfield. It is a radio and Radar research and experimental laboratory engaged, among other things, on the development of airborne radio equipment. Towards the end of 1942 and at the beginning of 1943 experiments were being made in connection with a radio altimeter. The Institute was also working on the development of an automatic balloon-borne transmitter for meteorological work.

Hans Häusler

Baierbrun

(3)

The works of the Flugmotoren Reparaturwerk Hans Häusler are in Baierbrun, 6 miles to the South of Munich in the valley of the River Isar. They are reported to employ some 2,000 workers on repairs of aero engines.

Junkers G.m.b.H.

Allach

(2)

The Junkers Motorenbau G.m.b.H. are engaged on the manufacture of Diesel engines and special components for submarines of which they are believed to be the leading German makers.

Engineering and Armaments

Maffei

Allach

(1)

Maffei

Munich

(3)

Maffei

Freimann

(3)

The Locomotivfabrik Krauss & Comp. J.A.Maffei A.G. are highly-important producers of steam and electric locomotives, turbines, compressed air hammers, stationary engines, and other heavy machine tools. They construct tractors from 5 tons upwards, and are also reported to supply locomotive components to Henschel of Kassel. The output of locomotives from the Maffei works has been estimated as 48 monthly. They are now also engaged on the production of armoured vehicles and tanks. The main works of the Maffei concern, which alone are said to employ some 10,000 workers, including a proportion of foreign labourers, lies immediately to the East of the railway station of Allach, an outlying suburb 4 miles to the North-west of the city centre. The second plant is situated in the city area immediately to the West of the main Munich goods station. The third plant, which is of recent construction, has been built in the Northern suburb of Freimann, 3 miles from the centre of the city.

MÜNCHEN (contd.)

Süddeutsche Bremse A.G.

Moosacherstr.

(2)

The Süddeutsche Bremse A.G. are mainly owned by the Knorr Bremse A.G. of Berlin, and normally produce railway vacuum brakes. Their works lie in the suburb of Oberwiesenfeld near to the B.M.W. plant. It includes a large aluminium foundry. In 1930 the Süddeutsche Bremse took up the production of Diesel engines under licence from the Daimler Benz concern. They are now reported to be employing some 6,000 workers, and to be building Diesel engines for tractors, tanks, lorries, and other types of heavy military transport. In 1943 it was reported that their production was especially concentrated on engines for tractors.

Rathgeber

Moosach

(2)

The Waggonfabrik Jos. Rathgeber A.G. are important builders of railway goods wagons (including refrigerator wagons) and heavy road vehicles. They are now reported to be constructing chiefly artillery tractors, limbers, and wireless trailers. Their works have been greatly extended during recent years. 1,500 workers were employed before the war, but this number will now have been much increased. The works lie close to the suburban railway station of Moosach, 3 miles North-west of the city centre.

Hugo Kustermann

Rosenheimerstr. }

Anton Schlüter

Balanstr. }

(2)

The Anton Schlüter Motorenfabrik were makers before the war of Diesel engines and pumps. Their works are in the South-eastern quarter of the town close to the foundry and iron works of Hugo Kustermann. These two firms are now believed to have been amalgamated, and have greatly enlarged their plant during the war. One section is reported to be making and assembling light tanks complete with engines. Another section manufactures shells (including A.A.) and hand grenades. Before the war some 1,200 workers were employed by these two firms, but the number has now without doubt increased considerably.

B.M.W.

Oberwiesenfeld

(2)

A large section of the works of the Bayerische Motoren Werke (which are referred to above under Aircraft and Aero-Engines) specialises in the production of motorcycle combinations for the German armed forces. Types are produced with 500 cc., 750 cc., and 1,000 cc., engines. It is reported that in January 1942 this section celebrated the completion of its 35,000th machine since the outbreak of war.

MÜNCHEN (contd.)

Friedrich Deckel Sendling (2)

The works of this firm are in Sendling, a suburb 2 miles South of the city centre. They make fuel-injection pumps, profiling and engraving machines, and photographic shutters. One section is devoted to the manufacture of precision-grinding apparatus. In 1943 it was reported that 1,800 workers were employed by this firm.

Optische Werke G.Rodenstock Isartalstr. (3)

This firm produces photographic lenses, binoculars, naval telescopes, and surveying instruments. Some 600 workers are reported to be employed.

Carl Hürth Holzstr. (3)

The Carl Hürth Maschinen- & Zahnradfabrik are makers of gears and complete transmission units for motor vehicles. They also produce grinding machines and other precision machine tools.

I.G.Farbenindustrie A.G. Camera-Werk Giesing (3)

These works, which belong to the I.G.Farben concern, normally produce the cheaper types of Agfa camera. They are now believed to be engaged on producing photographic appliances for the armed forces.

Siemens Schuckert Munich (3)

The former premises of the Isaria Werke A.G. have now been taken over by the Siemens Schuckert concern, and are being used for the production of power units for the Siemens automatic pilot. Some 1,200 workers are said to be employed here.

Askania Munich (-)

The Askania Werke A.G. of Berlin, makers of optical and precision instruments, have now established a large factory in Munich which is reported to employ several thousand workers. The exact location of this plant in the Munich area is not known, and it is possible they have taken over the premises of an existing firm. The Munich plant is reported to be manufacturing chiefly automatic pilots, compasses, and turn indicators. The works are said to occupy a site of 70,000 sq. metres, and to include an assembly workshop building five storeys high.

MÜNCHEN (contd.)

Metall Papier Elsenheimerstr. (3)

The Metall Papier Bronzefarben Blattmetal Werke A.G. are reported to employ approximately 1,000 workers and are makers of gold, silver, aluminium and copper foil.

Chemicals and Explosives

Dynamit A.G. Buchberg (-)

According to ground reports the Dynamit A.G. have erected a fairly large explosives works in the neighbourhood of Buchberg where in 1942 some 5,000 workers were reported to be employed.

Dynamit A.G. Wolfratshausen (3)

This is a large and very widely dispersed plant probably working in conjunction with the works at Buchberg. Ground reports suggest that the Wolfratshausen undertaking employs some 5,-6,000 workers.

Dynamit A.G. Kaufbeuren (3)

A further plant of the Dynamit A.G. is reported to have been erected 3km. North-west of Kaufbeuren and is said to cover an area of 7 x 4 km. The reports suggest that in May 1943 some 2,000 workers were employed on the production of explosives.

Gesellschaft für Linde's Eismaschinen Höllriegelskreuth (2)

This is the parent works of the Wiesbaden firm which also has factories at Aschaffenburg, Fürth, Augsburg, Nuremberg, Vienna, and a number of other towns in Germany. The Höllriegelskreuth works is mainly engaged in research and development in connection with refrigeration, liquefaction of air and gases, preservation of foodstuffs, etc. The works is also engaged on the construction of apparatus and plant (mainly of proto-types only) for the production of synthetic ammonia, purification and drying of gas mixtures, electrolytic oxygen production plant, etc. Apart from their own laboratories at Höllriegelskreuth, Linde also use the laboratories situated within the works area of the Electrochemischewerke München A.G. whose works is practically adjacent to the Linde plant. (See below)

MÜNCHEN (contd.)

Electrochemischewerke München A.G. Höllriegelskreuth (2)

This works occupies an area of 1,200' x 350' and prior to the war was mainly engaged on the production of hydrogen peroxide and derivatives. Little is known regarding this firms present activities but it is known that the works has been enlarged since the outbreak of war and it is believed to be fully active. (See also above under Linde).

Wacker G.m.b.H. Prinz Regenten Str. (3)

The Dr. Alexander Wacker Gesellschaft für Elektrochemische Industrie G.m.b.H. are an important chemical factory, among their products being calcium carbide, chlorinated hydro-carbons and chlorine compounds, butyl alcohol, synthetic shellac, ethyl and methyl acetate, acetylene, and cellulose acetate. Prior to the war Wacker was believed to be the principal German producer of some of these products. Some 1,000 workers are believed to be employed at the Munich factory. The firm's main works is at Burghausen, 60 miles East of Munich and close to the former Austrian border.

Rheinpreussen Lindwurmstr. (3)

The Rheinpreussen G.m.b.H. make a glycerine substitute which is used extensively in the textile industry and for glossing and finishing in the rubber, plastics, leather and paper industries; and also as glue, dye and varnish.

Hauff A.G. Feuerbach (3)

The firm of Hauff A.G. is one of the better-known German producers of photographic film and paper. They manufacture plates, films, and photographic chemicals.

Krauseder & Cie. A.G. Munich (-)

The Trockenplattenfabrik, Krauseder & Cie. A.G. are well-known producers of photographic plates and films.

Rubber and Tyres

Metzeler Westendstr. (2)

Prior to the war the Metzeler Gummiwerke A.G. were manufacturers primarily of motorcycle tyres and tyres for small cars. They were the principal source of the motorcycle and sidecar tyres used by the B.M.W. works and their production of these was estimated at 12,000 tyres and tubes per month.

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(2)
MÜNCHEN (contd.)

Metzeler (contd.)

They also made bicycle tyres and tubes in quantities, it is reported, as high as 50,000 a month. The plant has been partly converted to heavier types of tyres and it is believed that at present the output consists mainly of truck and motor tyres, which are being made at an estimated rate of 10,000 per month. In addition a very small number of aero-tyres are made here. Among other mechanical rubber goods the plant has a considerable output of rubber hose.

Foodstuffs

Kathreiner

Mühlendorfstr.

(-)

The Franz Kathreiner Nachf. A.G. are makers of malt coffee-substitute. They are the most important producers of this product in Germany. They employed some 800 workers before the war. Adjoining their factory in the Eastern quarter of Munich are large warehouses belonging to the Bavaria Lagerhaus & Transport G.m.b.H.

Tivoli

Jenserstr.

(-)

The Kunstmühle Tivoli A.G. own large flour mills with grain-storage facilities for up to 20,000 tons. Their premises are situated near the Langefeld Platz between the Isar and the large park known as the Englischer Garten.

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MÜNCHEN GLADBACH (Rhineland)

51° 15' N. 6° 25' E: 285 miles: (130,000)

München-Gladbach is 15 miles West of Düsseldorf, and is one of the chief centres of the Rhineland textile industry. There are a great number of spinning and weaving mills, cloth and clothing factories in the town, but it is believed that a large part of their trade was transferred early in the war to the textile districts in Saxony and Eastern Germany. The town's activity also includes a number of engineering works, some of which are mentioned below. München-Gladbach is a railway junction of importance to the Lower Rhineland, and two main traffic routes pass through the town.

Transportation

Railway Junction München-Gladbach (3)

The direct lines to Aachen from the Ruhr and from Düsseldorf and the Wuppertal area meet at München-Gladbach, and lead thence to Aachen, 35 miles to the Southwest. The main line from Düsseldorf to Venlo and Southern Holland leads Northwestwards from München-Gladbach. A further branch line connects the town directly with Köln, 30 miles to the South-East. There are marshalling yards and a goods station to the East of the main railway station.

Public Utility Services

Gasworks M. -Gladbach (3)

In 1936 the municipal gasworks at M. -Gladbach made 270 mill. cu. ft. of gas.

Engineering and Armaments

Meer A. G. Karmannstr. (3)

The Maschinenfabrik Meer A. G., a subsidiary of the Mannesmann-Röhren concern of Düsseldorf, has a plant in München-Gladbach which employed some 700 workers before the war. They construct rolling-mill machinery for iron and steel tubes, steam and hydraulic presses, pumps and compressors of all kinds.

A. Montforts München-Gladbach (3)

This firm normally makes textile machinery, particularly combing, cutting and finishing machines. They are now reported to be making components for small arms.

W. Schlafhorst Blumenbergerstr. (3)

This firm, which makes textile machinery, employed some 700 workers before the war.

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MÜNSTER (Westphalia)

52° N. 7° 40' E: 335 miles: (143,000)

Münster is the chief town and administrative centre of Westphalia and is an important railway junction. The Dortmund-Ems Canal passes through the town, (which has an inland harbour) and some 5 miles to the North, is carried over the River Ems by means of a large aqueduct. There are a variety of industries which include flour milling, agricultural machinery, and dye works. None of these is of outstanding importance.

Transportation

Inland Harbour and Aqueducts Münster (2)

The inland harbour is in the South-eastern quarter of the town, and consists of a dock basin leading out of the Dortmund-Ems Canal. Five miles to the North of Münster this Canal crosses the River Ems by means of two aqueducts, the newer and larger of which is built of reinforced concrete in three spans, and has a total length of 426 feet with a width of 98 feet.

Railway Junction Münster (2)

Münster is 20 miles North of Hamm, and an important railway line runs from Hamm through Münster to join the main railway from North Germany into Holland at Rheine 25 miles to the North. A second main line leads from Osnabrück through Münster to Wesel and the Lower Rhineland. A branch line connects Münster direct with Gronau to the North West, and two further branch lines with the Eastern part of Westphalia.

Railway Repair Shops Münster (3)

These are medium-sized repair shops which undertake the repair mainly of goods wagons.

Public Utility Services

Gasworks Münster (3)

In 1936 the Münster municipal gasworks bought 380 million cu. ft. of gas for re-sale from the Radbod coking plant of the Hoesch-Köln-Neussen A.G.

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NAUMBURG (Province Saxony)

51° 10' N. 11° 50' E: 515 miles: (35,000)

Naumburg is on the River Saale 25 miles South-west of Halle and on the main railway line through Erfurt to Frankfurt-a. Main and South-west Germany. The industry normally comprises textiles, mostly hosiery and knitted goods, furniture making, and a few specialised manufactures, such as combs and millinery articles.

Transportation

Railway Repair Shops Naumburg (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

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NECKARSULM (Württemberg)

See under HEILBRONN

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NEHEIM (Westphalia)

51° 25' N. 7° 55' E: 350 miles: (53,000)

Neheim is 15 miles South-east of Hamm and on the Upper reaches on the River Ruhr. It is on the border of the hilly district of Southern Westphalia known as the Sauerland. The town has a considerable light metal-ware industry and specialises in peacetime in the manufacture of lamp brackets and lighting fixtures. There are a large number of factories and workshops in this trade, but none is of importance.

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NEISSE (Silesia)

50° 30' N. 17° 20' E: 760 miles: (35,000)

Neisse is 30 miles South-west of Oppeln and within 5 miles of the Czechoslovakian frontier. It is a market town and the centre of an agricultural district. In peacetime there are a large number of bakeries specialising in a popular confectionery product (Honigkuchen). There is one engineering firm which is mentioned below, but otherwise no industry of importance.

/Engineering and Armaments

NEISSE (Contd.)

Engineering and Armaments

Hahn & Koplowitz Neisse (3)

The Neisser Eisenengiesserei & Maschinenbauanstalt Hahn & Koplowitz Nachf., who appear to have increased their trade considerably in the years preceding 1939, are makers of lathes, boring and grinding machinery, and other machine tools. They were employing some 800 workers at the outbreak of war.

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NEUBRANDENBURG (Mecklenburg)

53° 35' N. 13° 15' E: 580 miles: (22,000)

Neubrandenburg is in the Eastern part of Mecklenburg 60 miles North of Berlin. It is on the main line from Berlin to Stralsund, and is a railway junction of considerable local importance. Mecklenburg is a valuable agricultural district and Neubrandenburg is one of the chief market centres, in particular for cattle. Apart from the firms mentioned below there are no important industries.

Aircraft and Aero-Engines

R. Rinker G.m.b.H. Neubrandenburg (3)

The Richard Rinker G.m.b.H. normally construct wooden agricultural appliances, but are now reported to be employing approximately 1,000 workers on the construction of wooden components for aircraft.

Engineering and Armaments

Lythall K.G. Neubrandenburg (3)

The Maschinenfabrik Lythall K.G. are makers of agricultural machinery. They are now reported to be employing several thousand workers on the manufacture of munitions, including bomb casings and racks, and hand grenades.

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NEU ISENBURG (Hesse)

50° 5' N. 8° 45' E: 400 miles: (15,000)

Neu Isenburg is 4 miles South of Frankfurt a. Main on the Southern edge of the forest known as the Frankfurter Stadtwald. There are a number of furniture factories, but no industries which are individually of importance.

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NEUMUNSTER (Schleswig Holstein)/

NEUMÜNSTER (Schleswig Holstein)

54° 5' N. 10° E: 460 miles: (52,000)

Neumünster is 20 miles South of Kiel of the main line from Hamburg to Kiel. It is in the centre of the rich agricultural district of Holstein, and is an important corn and cattle market. Tanning and the preparation of leather are the main industries.

Transportation

Railway Junction Neumünster (3)

The main line from Hamburg divides into two at Neumünster, one branch leading Northwest to Flensburg, and the second due North to Kiel. Four other branch lines radiate from the town and serve the district of Holstein.

Railway Repair Shops Neumünster (3)

These are medium-sized repair shops which undertake the repair of passenger coaches and goods wagons. Approximately 1,000 workers are employed.

Aircraft and Aero-Engines

Leichtbau G.m.b.H. Sedanstr. (3)

The Neumünster works of the Land & See Leichtbau G.m.b.H. are reported to be making tail units and components for He.111. They also undertake the repair of aircraft.

Leather

Adler & Oppenheimer A.G. Neumünster (3)

The Adler & Oppenheimer A.G. are an important leather concern which employed some 2,000 workers in 1939 on the tanning and preparation of all kinds of leather. Their factories are at Neumünster, and at Neustadt-Clewe in Mecklenburg.

H.G. Schmid Neumünster (3)

The firm of Herman G. Schmid is an important producer of sole leather.

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NEUNKIRCHEN (Saar)

49° 20' N. 7° 10' E: 355 miles: (41,000)

Neunkirchen is in the Eastern part of the Saar coal mining area and is 15 miles North-east of Saarbrücken. There are several large coal mines near to this town. The main industry in the town itself is the large iron and steel works mentioned below. Neunkirchen is on a main line leading from Hamburg to Saarbrücken and is the junction for an important branch leading North to Ottweiler and St. Wendel.

Public Utility Services/

NEUNKIRCHEN (Saar) (Contd.)

Public Utility Services

Gasworks Neunkirchen (3)

The municipal gasworks in 1936 made 130 million cu. ft. of gas and bought for resale a further 65 million cu. ft. from the Neunkirchener Eisenwerk (See under Solid Fuels).

Solid Fuels

Grube Heinitz Neunkirchen (2)

This coal mine, which together with the other mines in the Saar territory, belongs directly to the German Government and is administrated by the official Saargruben Verwaltung, has six pitheads. The 1937 output was 1,700,000 tons. There is a coking and by-products plant attached to the mine. There are 129 coke ovens and in 1937 the plant had an estimated dry coal capacity of 900,000 tons.

Grube Reden Neunkirchen }
Grube Neunkirchen Neunkirchen } (3)
Grube Frankenholz Neunkirchen }

These three mines, each of which has three pitheads in 1937, had an output of 1,500,000, 1,200,000 and 600,000 tons of coal respectively.

Neunkirchener Eisenwerk A.G. Neunkirchen (3)

Lying 1 m. West of Neunkirchen town, the coking plant attached to this steelworks has 140 ovens, and an estimated annual dry coal capacity of 1,117,000 tons per annum (See also under Iron and Steel).

Iron and Steel

Neunkirchener Eisenwerke Neunkirchen (2)

The Neunkirchener Eisenwerke A.G. vorm. Gebrüder Stumm is an important and very old-established iron and steel works. Before the war some 7,000 workers were employed and this number is now reported to have been considerably increased. There are six blast furnaces, four Bessemer converters, four open-hearth and three cupola furnaces, and the capacity is estimated as 700,000 tons of steel per annum.

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NEURUPPIN (Brandenburg)/

NEUSS (Rhineland)

51° 12' N. 6° 42' E: 290 miles: (62,072)

Neuss, which lies South-west and within the administrative area of Düsseldorf, is on the western bank of the Rhine, and is of some importance as an inland harbour. All the normal industries of a port- such as flour milling, food and oil storage, etc. are carried on here, and, in addition, the most important factory in Germany producing nuts and bolts is situated at Neuss. Other industries include the manufacture of radiators, sanitary fittings, and agricultural machinery. The area under consideration extends for about 7 square miles.

Transportation

Railway Junction and Marshalling Yards Neuss (3)

The Neuss marshalling yards lie to the North and South of Neuss main station and form an important traffic-centre, having a capacity to deal with 2,200 wagons per 24 hours. To the North of the marshalling yards lies the junction of the lines to Krefeld, Düsseldorf, München-Gladbach, Aachen and Köln, and to the South lies the Junction of the lines to München-Gladbach, Aachen and Köln.

Inland Port Neuss (3)

Situated on the East of the town, with a waterfront of 16,000 metres, this harbour is of some importance, since it is the traffic port of Aachen, München-Gladbach, Rehd, Jülich, Stolberg, and Grevenbroich. Plant includes facilities for storage, various types of elevators, 7 electric cranes, 7 electric loading bridges, gas-oil bunkering stations etc. The harbour has its own tug service and in 1938 had an incoming traffic of 956,000 tons and an outgoing traffic of 495,000 tons.

Public Utility Services

Städtische Gas-u. Elektrizitätswerke Neuss (3)

The Neuss Municipal Gasworks, which is situated on the Rheintorstrasse. West of harbour I. bought 660,000,000 cubic feet of gas from the Ruhrgas A.G. for resale in 1936. Also included on the site is a small electricity substation.

R.W.E. Transformer Station Neuss (3)

This transformer station lies at the southern end of harbour III and North of the Nationale Radiator Company.

NEUSS (contd.)

Engineering and Armaments

International Harvester Co. G.m.b.H. Neuss (2)

This branch of the American firm is believed to employ nearly 4,000 workers on the manufacture of M.T. and tank components in addition to its normal range of agricultural machinery. Also attached to the site is a plant for the manufacture of binder-twine. The factory is situated between harbours I and II of the inland port of Neuss and there is a large storage depot on the opposite side of the harbour II.

Nationale Radiator G.m.b.H.) Neuss (3)
Deutsche Standard für Sanitare Anlagen)

The two factories are operated by the Nationale Radiator G.m.b.H., a subsidiary of the American Radiator and Standard Sanitary Corporation. They are almost adjacent and on the Eastern side of Harbour II. The Nationale Radiator G.m.b.H. manufactures cast-iron radiators and malleable iron castings on a site of about twenty-four acres; the Deutsche Standard works manufactures sanitary installations of all types both of metal and vitreous china, on a site of about twenty-seven acres.

Bauer & Schaurte Neuss (3)

Lying almost due West of and adjoining the Neuss main station, this factory is the leading German manufacturer of nuts and bolts and probably the largest supplier of these to the Reichsbahn. The firm also undertakes a limited production of small type machine tools. It was reported that 600-800 workers were employed in 1942.

Peltz G.m.b.H. Neuss (-)

This firm, which formerly employed over 300 workers, is situated North-East of Neuss main station, adjoining the marshalling yards. The factory produces safes of all types.

Holzbau A.G. Neuss (-)

Situated between the International Harvester Co.'s Factory and the Rennplatz, this firm manufactures apparatus and all kinds of equipment for the erection of barracks and portable huts.

NEUSS (contd.)

(2) Schraubenwerk Neuss Fissene & Co. Neuss (3)

Situated on the Buderusche Strasse 1 mile North of Neuss main station, the factory manufactures nuts and screws. In 1943 it was reported to be employing 820 workers and to be engaged on the production of bolts, rivets, and various small components for aircraft.

Edelstahlwerk Düsseldorf-Heerdt G.m.b.H. Neuss (-)

Situated $1\frac{3}{4}$ miles North East of Neuss main station, this firm is one of 15 or 20 other similar small plants in western Germany. It is a producer of crucible steel in small quantities for restricted specialised purposes, such as springs, etc. Many of these similar small firms are still privately owned.

Heinrich Koppers G.m.b.H. Neuss (3)

The silica works of this firm lies $2\frac{1}{2}$ miles North-east of Neuss main station. It is one of the principal German producers of silica refractories of all kinds and supplies industry, as well as Koppers' own constructional activities (for coke ovens, etc.).

Chemicals and Explosives

Chemische Fabrik Wesseling A.G. Neuss (3)

The Neuss plant of this firm is situated $1\frac{1}{2}$ miles South-east of Neuss main station between the Kölner and Berghauschenstrassen. The factory occupies a fairly large site and manufactures sulphuric acid, bleaching powder and various ferro-cyanide compounds, particularly for dyestuffs.

Chemische Fabrik Niederrhein G.m.b.H. Neuss (-)

The works lies on the Eastern side of the Flosshafen, $1\frac{1}{2}$ miles North-east of the main station. It is engaged on the production of barium salts.

Chemische Fabrik Dr.Kurt Albert G.m.b.H. Neuss (-)

The branch chemical works of Dr.Kurt Albert, G.m.b.H., now known as Chemische Werke Albert A.G., whose main works are at Amöneburg bei Wiesbaden, are situated 2 miles South of Neuss main railway station. The firm manufactures copper sulphate, synthetic resins, and plastics.

NEUSS (contd.)

Peter Gremer, Standard-Seifen u.
Glyzerinwerke

Heerdt
Am Hochofen

(-)

Soap, washing powders, and glycerine
are manufactured by this firm, which
lies two miles North-east of Neuss
main station on the Western bank of
the Erft canal.

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NEUSTADT (Bavaria)

49° 20' N. 8° 10' E: 395 miles: (24,000)

Neustadt an der Weinstrasse is 15 miles South-west of Ludwigshafen in the Bavarian Palatinate. It is a railway junction of some local importance. There is a small textile industry, but activity is mainly connected with the wine-growing interests of this part of the Palatinate.

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NEUSTADT-CLEWE (Mecklenburg)

53° 20' N. 11° 35' E: 515 miles (4,000)

Neustadt-Clewe is 20 miles South of Schwerin in the eastern area of Mecklenburg. The only industrial activity of note is a leather-tanning factory.

Leather

Adler & Oppenheimer Neustadt-Clewe (3)

The Adler & Oppenheimer A.G. are an important leather concern which employed some 2,000 workers on the tanning and preparation of all kinds of leather. Their factories are at Neustadt-Clewe, and at Neumünster in Schleswig-Holstein.

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NEUSTETTIN (Pomerania)

53° 45' N. 16° 40' E: 720 miles: (20,000)

Neustettin is in the South-eastern portion of Pomerania and is the market town for a large agricultural district. There are no industries worthy of special mention.

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NEUSTRELITZ (Mecklenburg)

53° 20' N. 13° 5' E: 570 miles: (24,000)

Neustrelitz is 60 miles North of Berlin and on the main lines from Berlin to Rostock and to Stralsund, which diverge at Neustrelitz. It is the market town and administrative centre for the agricultural district of eastern Mecklenburg. There is no industry of importance.

Transportation

Railway Repair Shops Neustrelitz (3)

These are medium sized repair shops for the repair of goods wagons.

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NEUWIED (Rhineland)

50° 25' N. 7° 25' E: 340 miles: (25,000)

Neuwied is on the right bank of the Rhine seven miles downstream from Koblenz. The industries include the manufacture of tiles and building materials from the porous stone quarried in this neighbourhood, and there is a large iron works.

Iron and Steel

Rasselsteiner Eisenwerke Ges. A.G. Rasselstein (2)

This firm, now absorbed by the Otto Wolff group, is situated one mile outside Neuwied at Rasselstein in the valley of the Wied, a small tributary of the Rhine. Before the war, some 3,000 workers were employed and the firm claimed to be the oldest tinsplate factory in Germany. The plant includes a steel foundry, 3 open-hearth furnaces, an annealing furnace, and sheet and cold rolling mills. The whole process from steel-making to tinning is undertaken. The annual crude steel capacity of the plant is estimated at 150,000 tons.

NIEDERMARSBERG

51° 28' N 8° 52' E. 390 miles (5,800)

Niedermarsberg lies approximate 20 miles West of Warburg, on the right bank of the river Diemel, a tributary on the Weser. It has no industries of any importance, other than a copper-smelting plant.

Non-Ferrous Metals.

Arbeitsgemeinschaft Stadtberger Kupferhütte G.m.b.H. Niedermarsberg (3)

This is a smelting plant for the treatment of ores from the Grube Oskar mine, near Stadtberge. It has an annual output of about 8,000 tons of blister copper.

NIENBURG a.d. WESER

52° 38' N 9° 13' E: 410 miles (12,000)

Nienburg lies on the right bank of the River Weser, about 22 miles North of Minden. It is a small town, with little industry of any importance.

Chemicals & Explosives/

NIENBURG a. d. WESER (contd.)

Chemicals and Explosives

Kali Chemie A.G. (Egerstorff's Salzwerke-u Chemische Fabrik) (3)

The Nienburg works of the Kali Chemie A.G. Berlin manufactures sulphuric acid and soda ash products. This plant is reported to have a capacity for the production of over 20,000 tons of 100% sulphuric acid per annum by the lead-chamber process.

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NIESKY (O/LAUSITZ)

51° 17' N. 14° 50' E: 64.5 miles: (7,800)

Lying about 15 miles North-west of Gorlitz, this small town is on the main road from Gorlitz to Forst. There is only one factory of any size in the town.

Christoph u Unmack A.G. Niesky (3)

This is a wood and metal-working firm with branch factories at Kalschewen and Berlin. The Niesky works specialise in the manufacture of wooden buildings, and also produce a small number of wagons, trailers, boilers, etc. In 1939, 800 workers were employed at Niesky.

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NORDENHAM (Oldenburg)

53° 30' N. 8° 30' E: 390 miles: (20,000)

Nordenham is a small port on the left bank of the Weser 4 miles upstream from Bremerhaven. It is principally a fishing harbour and the headquarters of the Midgard fishing concern.

Liquid Fuel

Oil Storage Blexen (3)

There are large oil storage installations both at Blexen, 4 miles downstream from Nordenham, and in Nordenham itself. The Blexen tanks have a capacity for 150,000 tons, and the Nordenham tanks for 90,000 tons.

Non-ferrous Metals

Metallwerke Unterweser A.G. Nordenham(Oldenburg)(3)

This plant is engaged on the working of ores and the manufacture of chemicals, including the production of sulphuric acid. In 1937 their estimated output of lead was 8,000 tons, of zinc 20,000 tons and of sulphuric acid 32,000 tons.

Aircraft and Aero Engines/

NORDENHAM (Oldenburg) (contd).

Aircraft and Aero Engines

Weser Flugzeugbau Blexen (3)

The Weser Flugzeugbau G.m.b.H. employ some 1,500 workers mainly on the repair of flying boats. Their works are at the seaplane base on the left bank of the Weser 4 miles to the North of Nordenham in the suburb of Blexen.

Shipbuilding

Midgard Nordenham (-)

The Midgard Deutsche Seeverkehrs A.G. are the owners of a fleet of trawlers and auxiliary vessels and are important suppliers of fish to the German markets. Their headquarters and chief coaling station is at Nordenham where they own the jetties and port facilities.

Engineering and Armaments

Seekabelwerke Nordenham (-)

The Norddeutsche Seekabelwerke A.G., which is jointly owned by Felten und Guilleaume and Siemens und Halske, have their factory at Nordenham and in peacetime owned two cable-laying ships which operated from this port. They manufacture and carry out maintenance of deep-sea cables; in 1939 employed some 400 workers.

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NORDHAUSEN (Province Saxony)

51° 30' N. 10° 50' E: 470 miles: (38,000)

Nordhausen is in the Southern area of the Hartz Mountains, and is 60 miles West of Halle on the railway line from Halle to Kassel. It is a market centre for the agricultural district which lies between the Hartz Mountains and the Thuringer Wald, and it is a tourist resort for the Southern Hartz. The town has largely preserved its mediaeval character. There are several furniture factories, printing works, and a small textile industry. The engineering industry of the town has specialised in the making of mining equipment and pumping installations, and the chief firms engaged on this work are mentioned below.

Mabag/

NORDHAUSEN (Province Saxony) (Contd).

Mabag	Rothenburg Str.)	
Tiefbau A.G.	Rothenburg Str.)	(3)
Deutsche Schachtbau A.G.	Rothenburg Str.)	

The Mabag Maschinen & Apparatebau A.G., the Tiefbau & Kälteindustrie A.G. vorm. Gebhardt & König, and the Deutsche Schachtbau A.G. are three companies which belong to the Deutsche Petroleum A.G. and its parent company the Deutsche Erdöl A.G. The Mabag are primarily makers of oil, gas, and water storage tanks, tank wagons, and similar installations. The works of the Tiefbau A.G. and of the Deutsche Schachtbau A.G., which construct oil-well boring equipment, in particular "shaft freezing" installations, are now operated by the Mabag. These companies undertake well-boring operations on behalf of their parent company which, in addition to its numerous brown-coal mines, is one of the chief undertakings concerned in the development of Germany's natural oil resources in the Hannover district and elsewhere. Some 1,800 workers were employed by these three Nordhausen firms before the war.

Maschinen & Bahnbedarf A.G. Nordhausen (3)

This firm was formerly known as the Orenstein & Koppel A.G. and in 1938 employed some 1,000 workers on the manufacture of narrow-gauge locomotives and rail car engines.

H. Anger & Söhne Rothenburg Str. (-)

This firm whose works adjoin those of the Mabag, makes pumping installations for mines and deep wells. Some 300 workers were employed before the war.

Schmidt, Kranz & Co. A.G. Ullrichstr. (3)

The Schmidt Kranz & Co. A.G. ("Normag") are makers of elevators, machinery for mines, sluice gates and weirs, and of Diesel-driven agricultural tractors. They employed some 500 workers in 1939.

N O R D H O R N (Hanover)

52° 25' N. 7° 5' E: 315 miles: (22,000)

Nordhorn is close to the Dutch frontier on a branch railway which leaves the main Berlin-Hanover-Holland line at Bentheim 10 miles to the South and leads through Nordhorn to Coevorden in Holland. The Vechte-Ems branch canal connects Nordhorn with the Dortmund-Ems canal 8 miles to the East. The peacetime industry is almost entirely textile and it is reported that Nordhorn is now making a speciality of parachute manufacture. Much of the labour now employed is drawn from the neighbouring districts of Holland.

Textiles, Rayon, Pulp and Paper

Niehms & Dätting Nordhorn (2)

This spinning and weaving mill, which is the largest of its kind in Nordhorn, is now specialising in parachute manufacture. Some 6,000 workers are believed to be employed.

Povel G. m. b. H.	Nordhorn	}	(3)
B. Rawe & Co.	Nordhorn		
Bussmate	Nordhorn		
Kistemaker & Schlieper	Nordhorn		

The above are examples of a number of spinning and weaving mills in Nordhorn, which are now believed to be largely engaged on parachute-making.

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NUREMBERG (NÜRNBERG) - (Bavaria)

49° 30' N. 11° 5' E: 510 miles: (450,000)

Nürnberg is the second largest city of Bavaria and claims to exceed Munich in the extent of its industrial development. It is a railway centre of great importance as it lies at the intersection of the North-South and the East-West traffic routes.

Nürnberg was chosen as the centre of the annual Nazi Party rallies and an area of over 2,500 acres to the South-east of the walled city, on the South bank of the Lake known as the Groser Dutzend Teich, was set aside for this purpose. The building schemes, which were still in process of completion at the outbreak of war, included numbers of vast public buildings, halls and offices, assembling grounds and arenas, and a gigantic stadium dedicated to the supreme manifestations of Nazi showmanship.

The old town is to the North of the main railway on either side of the small River Pegnitz, and is surrounded by the original city wall. It is a closely-built area, and its picturesque mediaeval architecture is the chief attraction for Nürnberg's large tourist traffic.

The principal industrial area is to the South of the main railway station and lies between the suburb of Schweinau and the Südbahnhof. Among the industries are important makers of vehicle engines, tanks, searchlights and electric motors. There are other industries at Herrnhütte, an outlying suburb to the North East of the walled city. Fürth, a town of 81,000 inhabitants, which almost joins Nürnberg to the West, is dealt with separately (see page 255).

Transportation

Railway Junction Nürnberg (2)

Two main railway lines coming from the North and from the West through Bamberg and Würzburg respectively join at Fürth before entering Nürnberg. To the East two lines, which run parallel for some 20 miles, lead into Czechoslovakia via Eger and Pilsen. To the South-east is a direct route via Passau to Vienna; to the South the main North to South line continues via Ingolstadt to Munich; and a further line leads from Nürnberg Southwards to Grailsheim and Stuttgart. All these are main railway arteries. The junctions are to the East and to the West of the main railway station, approximately one mile apart.

Marshalling Yards Südbahnhof (3)

The principal marshalling yards of Nürnberg, which are of recent construction, are close to the Südbahnhof approximately one mile to the South of the main railway station. They are capable of handling 2,900 wagons per 24 hours.

NUREMBERG (NÜRNBERG) - (contd.)

Goods Yards Nürnberg (3)

The Nürnberg goods yards are to the West of the main railway station close to the junction of the main lines from Fürth and from the South-west and South.

Railway Repair Shops Nürnberg (2)

These are large workshops which maintain and repair locomotives and all kinds of rolling stock. Some 3,500 workers are employed.

Railway Repair Works Nürnberg (3)

A second railway repair works has been built since 1942 to the West of the above and it is believed to be engaged on the repair of main-line locomotives.

Public Utility Services

Power Station Gebersdorf (2)

The thermal power station is situated $3\frac{1}{2}$ miles South-west of the main railway station at Gebersdorf, and has an installed capacity of 100 MW. It is owned by Grosskraftwerk Franken A.G. in which company the Nürnberg and Fürth Corporations have the controlling interests. The 100 KV switching and transformer station attached to the main Gebersdorf plant is owned by Bayernwerk A.G.; it is located in the Southern area of the plant and is important on account of its focal position in the electrical supply system of Southern Germany.

It is on the route that is being developed to carry the 220 KV line from the Central Austrian Alps to the Rhineland via Golpa and Dresden (Magdeburg).

It is believed to be a connecting point for the line from the Bayernwerk to Central Germany. Four long-distance 100 KV double-circuit transmission lines run to Bamberg, Kachlet, Würzburg, and Meitingen respectively. A 60 KV line runs to Weissenberg.

Local supplies are given at 20 KV and lower voltages to Nürnberg and district.

Gasworks Nürnberg (3)

In 1936 the municipal gasworks made 1,600 million cubic feet of gas. A small quantity of sewage gas was also taken from the city sewage plant.

(3) NUREMBERG (NÜRNBERG) - (contd.)

Non-Ferrous Metal Manufacture and Fabrication

Aluminiumwerke

Nopitschstr. (5)

(2) The Aluminiumwerke Nürnberg G.m.b.H. whose works are in the suburb of Schweinau, are makers of die-cast aluminium alloys, aero-engine pistons, cylinder heads, and of all kinds of aluminium and Nural (Electron) castings. Their annual capacity before the war was 2,500 tons.

Engineering and Armaments

M.A.N.

Nürnberg (1)

The works of the Maschinenfabrik Augsburg-Nürnberg A.G. occupy a large area in the southern part of the town immediately to the North of the Siemens-Schuckert plant. In peacetime the Nürnberg M.A.N. plant specialised in engines, turbines, boilers and accumulators. The iron and metal foundry had 15 cupola and melting furnaces with an estimated annual capacity of 10,000 tons. These works are second only in importance to the Augsburg factory of the M.A.N. concern and now have a similar range of products. They are important builders of Diesel engines and trucks and since 1936 or 1937 have devoted a large proportion of their capacity to the construction of various types of tanks. Approximately 6,000 workers were employed at the outbreak of war, but it is believed that this number will have been increased.

Siemens-Schuckert
Siemens-Schuckert

Katzwangenstr. (2)
Landgrabenstr. (2)

The Nürnberg works of the Siemens-Schuckert A.G. are divided into two sections, one (Katzwangenstr) being immediately to the South, and the other (Landgrabenstr) approximately 500 yards to the Northwest of the M.A.N. works. The Landgrabenstr. works construct electric motors of all types, including those for U-boats. They also manufacture and assemble sound-locators and searchlights. In 1942 they were reported as completing one searchlight per day. Other products of these works include dynamos, generators and electrical firing devices for sea-mines.

The Katzwangenstr. works are the principal German manufacturers and constructors of electrical transformers, including those of the largest size. These works were heavily damaged by bombing in 1943 and a considerable

NUREMBERG (NÜRNBERG) - (contd.)

Siemens-Schuckert (contd.)

number of transformers, already filled with oil and ready for despatch, were destroyed. Siemens-Schuckert Nürnberg factories are estimated to employ more than 10,000 workers.

G. Müller

Aussere
Bayreutherstr. (1)

The works of the Kugellagerfabrik Georg Müller are in the Northeastern suburb of Herrnhütte. They are the leading German producers of special ball-bearings for magnetos, and in this particular high-quality type of bearing they had a larger output than Kugelfischer of Schweinfurt. In November 1943 they were reported to be employing 1,000 workers. Their production will assume extra importance owing to the damage to the Schweinfurt plant, and it is possible that they are increasing their output of the heavier type of bearing.

Faunwerke

Wächterstr. (1)

The Faunwerke G.m.b.H., whose works are to the North-east of the central city area, are makers of heavy motor vehicles and tractors. Their works have been greatly enlarged and the number of workers employed has been reported as high as 14,000. In 1943 they were specialising in 8-cylinder Diesel tractors for use on road and rail, and adjustable to both the Russian and German gauges. The Diesel engines for these tractors were largely supplied by M.A.N.

Zündapp

Dieselstr. (2)

The main works of the Zündapp Werke G.m.b.H. are close to and South-west of the Schweinau railway station. Their products include motor-cycles and sidecars, electrical components for searchlights, small explosive-carrying "tanks" directed by remote control. There is also a small 50 h.p. Zündapp aero-engine. 4,000 workers are said to be employed by this firm, which has two other plants in Nürnberg. At one of their subsidiary factories munitions and hand grenades are reported to be produced.

Triumph Werke

Fürtherstr. (2)

The Triumph Werke Nürnberg A.G., whose works are to the West of the city on the road leading to Fürth, are makers of motor-cycles, bicycles, typewriters, and calculating machines. They employed some 2,000 workers before the war, having greatly increased their activity during the years 1934 to 1939. They are now believed to be making chiefly motor-cycles.

NUREMBERG (NÜRNBERG) - (contd.)

Noris Zündlicht

Malachstr. (-)

The Noris Zündlicht A.G. belong to the Elektrizitäts A.G. vorm. Schuckert & Co. one of the principal holding companies of the Siemens concern. The Noris works are in the Southwestern suburb of Schweinau. They are makers of sparking plugs and ignition systems for internal combustion engines. Before the war they employed some 300 workers.

Chillingworth A.G.

Walzwerkstr. (3)

The Press-, Stanz-, & Ziewerk Rud. Chillingworth A.G. are makers of steel constructional parts for ships, railways, motor vehicles, and aircraft. Their works, which are to the North-east of the city near the Ostbahnhof railway station, include a well-equipped plant with 16 large hydraulic presses, stamping machines, drop hammers, and electrical welding installations. They are believed to be producing bomb- and shell-cases. This firm doubled the number of its workers during the three years before the war, and were employing some 500 people in 1939.

Süddeutsche Apparatefabrik

Platenstr. (3)

The Süddeutsche Apparatefabrik G.m.b.H. belongs to the Standard Elektrizitäts Ges. A.G. which in its turn was mainly owned by the International Telephone & Telegraph Co. of New York. This Nürnberg factory is to the South of the city near to the M.A.N. works. It specialised before the war in the manufacture of selenium discs for wireless rectifiers. The output was 4 million discs per month. In March 1943, the factory was damaged by bombing, but is reported to be still partly operating in the old premises and also in other buildings in the town.

Nürnbergger Schraubenfabrik
Nürnbergger Schraubenfabrik

Paumgartnerstr. }
Obere Kanal Str. } (2)

The Nürnbergger Schraubenfabrik & Facondreherei are important makers of precision screws and nuts for tanks and aircraft, and are believed in 1942 to have been producing 20 per cent. of the German requirements. They are also reported to be making shells and small arms ammunition parts. The Paumgartnerstr. factory, which is in the East of the city and near the road to Fürth, employed some 1,300 workers before the war. The Obere Kanal Str. works, which are a short distance nearer to the city, are important makers of radio parts, and employed some 800 workers.

NUREMBERG (NURNBERG) - (contd.)

Ardie Werk

Preisslerstr. (3)

The Ardie Werk A.G. are makers of motorcycles and components. They employed some 800 workers before the war.

Neumeyer A.G.

Klingenhofstr. (2)

The Kabel and Metallwerke Neumeyer A.G. are a subsidiary company of the Hackethal Draht & Kabelwerke A.G. of Hannover. Their works are in the outlying North-eastern suburb of Herrnhütte. Some 3,000 workers were employed in 1939. They manufacture electric wires and cables, and in addition have a large press works and foundry which produce wires, rods, tubes and frames. Reports suggest that a major war-time product is cartridge cases.

Süddeutsche Telefon

Nonnenstr. (3)

The Süddeutsche Telefon Apparate. Kabel & Drahtwerke A.G. are a subsidiary of Felton & Guillaume of Köln. They employed approximately 1,000 workers before the war and manufacture radio receivers, telephone-exchange installations, and electrical signalling apparatus.

Armaturen & Maschinenfabrik A.G.
Armaturen & Maschinenfabrik A.G.

Glockenhofstr } (3)
Pegnitz

The Armaturen & Maschinenfabrik A.G. vorm. J.A. Hilpert (Amag-Hilpert-Pegnitzhütte) are makers of centrifugal and piston pumps and high-pressure steam fittings. They specialise in pumps for deep wells and for use in the heavy chemical industry. The Glockenhofstr. works are near the main railway station and produce mainly the pumping installations. The Pegnitz works, which include a foundry and three cupola furnaces, specialise in steam pressure valves and fittings. Some 1,500 workers were employed before the war.

Eisenwerk Nürnberg

Äussere
Sulzbacherstr. (3)

The Eisenwerk Nürnberg A.G. vorm J. Tafel & Co. are makers of iron frames and structures, bars, fish plates, nuts, bolts and screws. Their works are to the North-east of the city in the suburb of St. Jobst. They employed approximately 1,000 workers before the war.

NUREMBERG (NÜRNBERG) - (contd.)

Sprengstoff A.G.

Kirchenweg (3)

The Rheinisch-Westfälische Sprengstoff A.G., a firm belonging to the Dynamit A.G., manufacture S.A.A., percussion caps, and propellants. They are reported to have greatly expanded their works. Several thousand workers are now said to be employed.

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OBERHAUSEN (RHINELAND)

51° 30' N. 6° 50' E: 300 miles: 194,000

The area covered here lies in the Western section of the Ruhr industrial area and adjoins the areas of Duisburg in the West, Mulheim in the South, and Bottrop in the East. It includes Oberhausen in the South, Holten in the North west, and is bounded by the Rhineland-Westphalian provincial boundary in the North-east. More than half of the industries in the Oberhausen district are concerned with coal, coke, and iron and steel: these include the famous iron and steelworks of Gutehoffnungshutte Oberhausen A.G. The town is served by the River Ruhr in the South and by the Rhein-Herne Canal in the North.

At Starkrade-Holten there is an important power station, a tar-distillation plant, a Fischer-Tropsch synthetic oil and a synthetic ammonia plant, and part of the engineering section of Gutehoffnungshutte Oberhausen A.G.

At Osterfeld there are important marshalling yards and the Vondern colliery.

Transportation

Marshalling Yard Oberhausen-West (3)

The yard and junction are situated immediately North of the main station and have a capacity of 3,100 wagons per 24 hours. This was assessed by the German railway authorities as the most efficient yard in the country before the war.

Marshalling Yard Oberhausen-West (3)

The goods station is situated 1 mile West of Oberhausen main station and extends about 1 mile East North East. The capacity of the yard is not known.

Marshalling Yard Osterfeld-Süd (2)

The western end of the yard lies $2\frac{1}{2}$ miles North-east of Oberhausen main station, thence it extends about $1\frac{1}{2}$ miles to the East. The capacity is 6,800 wagons per 24 hours.

Twin locks, 2nd set N.W. of Oberhausen (3)

The second set of twin locks on the Rhine-Herne canal is situated $1\frac{1}{2}$ miles West North West of Oberhausen main station.

Twin locks, 3rd set N.E. of Oberhausen (3)

The 3rd set of twin locks is situated just South of the Osterfeld-Süd marshalling yard, $3\frac{1}{4}$ miles North-East of Oberhausen main station.

/Public

Public Utility Services

Ruhrchemie power station Sterkrade-Holten (2)

The power station was originally built to supply the steam and electrical requirements of the nitrate and chemical works of Ruhrchemie A.G. to whom it belongs. It is situated near the village of Holten, 5 miles North-west of Oberhausen. It is sometimes known as the "Oberhausen-Holten" power station. When the Ruhrbenzin A.G. Fischer-Tropsch synthetic oil plant was built adjoining it the power station was extended to meet the requirements of the plant and the original capacity of 10 MW. was increased to 80 MW. There is a substation in the North-west corner of the site. Supplies are given to the adjoining works probably by medium/and low-voltage underground cables. A 110-kV overhead transmission line connects to the 110/220 kV line to the Hamborn (Duisburg) substation.

Municipal Power Station Oberhausen (-)

It is situated $\frac{1}{2}$ mile South-west of the main station, and is believed to have a capacity of 7 MW.

Municipal Gasworks Oberhausen (3)

The gasworks, situated $\frac{1}{2}$ mile North-west of the station, is supplied by the Ruhr gas and Thyssen grids, 428 million cubic feet of gas were bought and sold in 1936.

Solid Fuels.

Concordia coking plant Oberhausen (3)

Situated $\frac{1}{2}$ mile North-west of Oberhausen main station, the plant is owned by the Concordia Bergbau A.G. and is adjacent to Pits 1/3. There are 155 ovens having an estimated annual dry coal capacity of 561,000 tons.

Osterfeld coking plant N. Oberhausen (3)

Owned by the Gutehoffnungshütte Oberhausen A.G., the plant is situated 2 miles North-North-East of Oberhausen station. There are 160 ovens having an estimated annual dry coal capacity of 1,500,000 tons. Gas is supplied to the Ruhr gas grid.

Jacobi coking plant N.N.E. Oberhausen (3)

Owned by Gutehoffnungshütte Oberhausen A.G., the plant is situated $3\frac{3}{4}$ miles North-North-East of Oberhausen main station. There are 160 ovens with an estimated annual dry coal capacity of 860,000 tons.

/Concordia colliery

OBERHAUSEN (RHINELAND) (Contd.)

Concordia colliery N.W. of Oberhausen (3)

Situated North-west of Oberhausen the output of the colliery in 1937 amounted to 1,570,000 tons of hard coal. Some 2,860 workers were employed in the coking plant and colliery before the war.

Osterfeld 1/4 Colliery N. Oberhausen (3)

This colliery also includes Sterkrade 1/2 and is owned by Gutehoffnungshütte A.G. It is situated North-east of Oberhausen station. In 1937 the output of these pits was 2,320,000 tons of hard coal.

Vondern 1/2 Colliery Oberhausen (3)

The colliery (including Jakobi Pit 1/2) is owned by Gutehoffnungshütte Oberhausen A.G. and is situated North-east of Oberhausen. The output in 1937 was 1,723,000 tons of hard coal.

Liquid Fuels

Sterkrade distillation plant Sterkrade (3)

Situated at Sterkrade Pits 1/2, $3\frac{1}{2}$ m. N.N.W. of Oberhausen main station. This tar distillation plant is owned by Gutehoffnungshütte Oberhausen A.G. The factory has a purifying plant and takes the raw material from many of the coking plants in the surrounding area. The tar distillery consists of 45 Otto ovens. 50,000 tons of tar were processed in 1929.

Rurchemie A.G. Sterkrade-Holten (2)

This Fischer-Tropsch synthetic-oil plant is owned by Ruhrbenzin A.G. and is situated 4 miles North-west of Oberhausen main station and 1 mile East of Holten: the works covers 27 acres. It has an estimated capacity of 125,000 tons per annum and storage capacity of 27,000 tons. The works has its own power station (see under "Public Utilities") but also takes power from the grid. The chief products are petrol, gas-oil and lubricants. See under "Chemicals" for details of the adjoining synthetic-ammonia plant.

Iron and Steel

Gutehoffnungshütte Oberhausen A.G. Oberhausen (1)

The iron and steelworks are situated 1 mile North-east of Oberhausen main station. There are 8 blast furnaces with an estimated annual capacity of 900,000 tons of pig iron; 6 basic Bessemer converters and 12 open-hearth furnaces with a capacity of approximately 1,200,000 tons of crude steel per annum. The plant has rolling mills capable of absorbing /the

OBERHAUSEN (RHINELAND) (Contd.).

(3) Iron and Steel

the whole of its steel output and the finished products cover the usual full range. See also under "Engineering and Armaments". The company has its own power station having an estimated capacity of 27 MW.

(3) Non-Ferrous Metal Manufacture and Fabrication

A.G. des Altenbergs für Berghau
und Zinkhüttenbetrieb

Oberhausen (3)

(3) Situated $\frac{1}{2}$ m. South-east of Oberhausen main station, the firm has an estimated capacity of 24,000 tons of zinc sheets annually, and employs over 200 workers.

(3) Engineering and Armaments

Gutehoffnungshütte Oberhausen A.G.

Sterkrade (2)

(3) The firm's engineering sections lie $2\frac{1}{2}$ miles North of Oberhausen main station at Sterkrade. They are one of the principal manufacturers of heavy equipment for steelworks etc., and are also important producers of steam turbines, compressors, and pumps. Other products include lifts and hoists, cable ways, coal-cleaning and ore-dressing plant, and trams for mines. See also under "Iron & Steel".

Babcock & Wilcox

W. Oberhausen (2)

(3) Deutsche Babcock & Wilcox Dampfkesselwerke A.G. are situated 1 mile West of Oberhausen main station. They are one of the four principal German makers of land boilers. Other products are ventilators (for mines) and travelling grates.

Chemicals and Explosives

Ruhrchemie A.G.

Sterkrade-Holten (3)

(3) The Casale-process synthetic-ammonia plant lies adjoining the synthetic-oil plant, 4 miles North-west of Oberhausen main station. The ammonia-oxidation plant has 272 small Ostwald converters. The capacity is estimated at 54,000 metric tons of nitrogen per annum. In addition, there is a nitric-acid plant; other products are ammonium sulphate, ammonium nitrate, and sodium nitrate. For the synthetic-oil plant see under "Liquid Fuels".

Kali Chemie A.G.

Oberhausen (3)

The works which make sulphuric acid are situated immediately adjoining, and West of, Oberhausen main station. They are important consumers of
/Pyrites

OBERHAUSEN (RHINELAND) (Contd.)

Chemicals and Explosives

pyrites, and it is probable that the pyrites deliveries on the Rhine-Herne canal are mainly for this company. The lead-chamber process is used and the estimated annual capacity of 100% sulphuric acid exceeds 20,000 tons.

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/OBERBURG/MAIN

OBERNBURG/MAIN (BAVARIA)

49° 50' N. 9° 09' E: 425 miles: (2,600)

Obernburg is situated on the river Main, 14 miles south of Aschaffenburg. It is a small town with only one large works.

Public Utility

Power station

Obernburg (-)

The thermal power station is owned by the Vereinigte Glanzstoff-Fabriken A.G. Wuppertal, and is believed to have an installed capacity of 18MW.

Textiles, Rayon, Pulp and Paper

Glanzstoff A.G.

Obernburg (-)

The Vereinigte Glanzstoff-Fabriken A.G. are manufacturers of artificial silk. The main factory is in Wuppertal.

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OBERNDORF (Württemberg)

48° 15' N. 8° 35' E: 445 miles: (10,000)

Oberndorf is in the South-western area of Württemberg on the upper reaches of the River Neckar, and on the eastern side of the Black Forest. The main line from Stuttgart to Schaffhausen and Zurich passes through Oberndorf. The parent works of the Mauser weapon concern are the industry of what would otherwise be a remote market town. The population, which was only 6,000 in 1937, will now have been greatly increased through the wartime expansion of these works.

Engineering and Armaments

Mauserwerke

Oberndorf (1)

The Mauserwerke A.G. are an old-established weapon factory which specialises in automatic pistols and rifles. During the interval period their plant continued to be highly active and was partly occupied by producing precision tools, textile machinery, and adding machines. They were a valuable potential supplier of armaments, and in 1938 were already employing some 12,000 workers, having trebled the number during the previous two years. A new factory which went into production in 1940 has been erected in the woods to the South of the Oberndorf, and the old works are now said to be engaged largely on repairs. The large numbers of imported labourers are housed in newly-erected workers' colonies.

/The

OBERNDORF (Württemberg) (Contd).

Engineering and Armaments

The range of production includes 15 mm. and 20 mm. cannon, machine guns, automatic pistols, rifles, and carbines. This firm is among the leading specialists in the small-arms field, and is of great importance to the German war machine.

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OBERNKIRCHEN (Hanover)

52° 15' N. 9° 5' E: 400 miles: (4,000)

Obernkirchen is on a branch railway, 10 miles East of Minden. It is the centre of a small coalfield, which provides the chief industrial activity of the town. The other industries, which include small glass factories and brickworks, are of no importance.

Solid Fuels

Gesamtbergamt

Oberkirchen (3)

The Gesamtbergamt Obernkirchen G.m.b.H. owns four pits in the vicinity of Obernkirchen, which before the war had a total annual output of about 400,000 tons of coal. There is a coking and by-products plant, and a briquetting plant which produced 64,000 tons of briquettes in 1937. Some 2,400 workers are believed to be employed.

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OBERSCHELD (Hessen-Nassau)

50° 45' N. 8° 10' E: 370 miles: (1,800)

Oberscheld is a small town three miles East of Dillenburg on the Siegen-Wetzlar railway line. Its importance arises from the working of the Siegenland iron-ore deposits in the vicinity.

Iron and Steel and Ferro-alloys

August Stollon Mine

near Oberscheld (3)

This iron-ore mine is situated in the Lahn-Dill district and is one of six owned by the Buderus'sche Eisenwerke A.G. In 1937 the output of this mine amounted to 306,000 tons of iron-ore and workers numbered 1,400.

Hochofenwerk/.

OBERSCHELD (Hessen-Nassau)(Contd.)

Iron and Steel and Ferro-alloys

Hochofenwerk Oberscheld

Oberscheld (3)

This works is owned by the Buderus'sche Eisenwerke A.G. Wetzlar. The plant has 2 blast furnaces and its own power station of a capacity under 10 MW. About 60,000 tons of pig-iron are believed to be produced annually.

-----oO-----

OBERURSEL (Hessen-Nassau)

50° 10' N. 8° 35' E: 390 miles: (12,000)

Oberursel is 6 miles North-west of Frankfurt a. Main and near to Bad Homburg in the Taunus district. Apart from the motor works the industries, which include leather and hosiery, are on a small scale.

Engineering and Armaments

Kl^öckner-Humboldt-Deutz

Oberursel. (3)

The former Motorenfabrik Oberursel A.G. were amalgamated with the Humboldt Deutz concern in 1930, and the works were closed down for some years. They were reopened in 1935 and are now believed to be employing some 1,500 workers and manufacturing small Diesel engines and fuel-injection pumps, as well as small troop-carrying trucks.

-----oO-----

OELS (Silesia)

51° 15' N. 17° 10' E: 775 miles: (16,000)

Oels is 18 miles North-east of Breslau and 20 miles from the Polish border. It is a garrison town and is the centre of an agricultural district. The industries, which include furniture manufacture, flour milling, and leather, are on a minor scale, but include a large railway workshops.

Transportation

Railway Repair Shops

Oels (3)

These repair shops, which are adjacent to the main railway station, employ some 3,000 workers, and undertake the repair and maintenance of locomotives and rolling stock of all kinds.

-----oO-----

/OELSNITZ

OELSNITZ (Vogtland)

50° 25' N. 12° 10' E: 540 miles: (16,000)

Oelsnitz (Vogtland) is in the Southern area of Saxony 10 miles South of Plauen. Textiles are the chief industry, in particular the making of curtains, carpets, shirts, and knitted goods. None of the factories are individually of importance. This town must not be confused with Oelsnitz (Erzgebirge), a coal-mining town 30 miles to the North East, which is described above.

-----oO-----

OESTRICH (Hessen-Nassau)

50° 5' N. 8° 5' E: 375 miles: (3,200)

Oestrich in the Rheingau is on the right bank of the Rhine, 4 miles upstream from Rudesheim and 10 miles West of Wiesbaden. It is mainly concerned with agriculture and wine growing, and the only plant of importance is the chemical works.

Chemicals and Explosives

Koepp & Co.

Oestrich (3)

Rudolf Koepp & Co., A.G. are manufacturers of heavy chemicals, including oxalic, formic, and prussic acid and caustic soda. They employed some 300 workers before the war.

-----oO-----

OFFENBACH ON MAIN (Hesse)

50° 5' N. 8° 45' E. 400 miles: (86,000)

Offenbach is best known as the leading German leather-goods manufacturing centre. It also has a reputation for the manufacture of leather and boots and shoes, and during the past 10 years has developed a modest engineering industry, which is, however, still mainly confined to a number of medium sized and smaller firms. The five engineering works listed below under "Engineering and Armaments" have all been extended in the course of the war, but none is individually of outstanding importance. In addition to the engineering works and the tanneries and leather goods factories, there is one large chemical plant, of the I.G. Farbenindustrie A.G., which is mainly engaged on the manufacture of dyes and colours.

Offenbach is a very closely built-up town of only little administrative importance. From a general administrative point of view, it is largely dependent on Darmstadt, the centre of the State of Hesse.

As a railway centre Offenbach is of little importance. It is situated on main lines but these are secondary to the lines/.

OFFENBACH ON MAIN (contd.)

lines between Frankfort and Hanau, on the opposite bank of the river.

Public Utility Services

Städt. Gas, Wasser und Elektrizitätswerke Offenbach (3)

The municipal gas, water and electricity works are situated on a corner site in the North-western area of the town. The gasworks purchased 380 million cubic feet of gas in 1936 from the Main-Gaswerke at Frankfort. The power station is reported to have an installed capacity of 24 MW.

Engineering and Armaments

Mayer & Schmidt Offenbach (2)

This firm is now believed to employ in the neighbourhood of 800 workers on the manufacture of grinding wheels and grinding machinery. It is one of the largest German grinding-wheel makers, and has a subsidiary factory at Rheinfelden in Baden where crude aluminium-oxide is produced.

Friedrich Schmalz Offenbach (3)

Prior to the war this firm employed some 300 workers on the manufacture of grinding wheels, tools, and machinery. It is believed to have been extended in the course of the war, and to be now employing roughly 500 workers. The factory is situated close to the works of Mayer & Schmidt mentioned above.

Wilhelm Stöhr Offenbach (3)

The Stöhr factory is mainly engaged on the manufacture of conveyors and similar transport installations. Prior to the war some 400 workers were employed by this firm.

Maschinenfabrik Hartmann A. G. Offenbach (3)

Hartmann specialises in the manufacture of silo and storage-house equipment, vacuum pumps and air purifying installations, and similar equipment. It is believed that some 500 workers are employed by this company.

Collet und Engelhardt/.

OFFENBACH ON MAIN (contd.)

Collet und Engelhardt A.G.

Offenbach

(2)

This is the largest of the engineering works in the district of Offenbach, and specialises in the manufacture of machine tools and special machinery for munition factories. Prior to the war at least one department of this undertaking was engaged on the manufacture of plant for aircraft works, and it has been reported that certain minor components for aircraft were at one time made here on a small scale. The present full range of products of this company is not known, but it is believed that the factory is fully active and reports suggest that in the neighbourhood of 1,400 workers are employed.

Note: There are in addition in the Offenbach area a number of small engineering works employing between 100 and 300 workers each. The larger of these are:

- | | |
|---------------------|--|
| Weintraud & Co. | Making canning machines, bottle washing, labelling and corking machines. |
| Jahn G.m.b.H. | Making rotating pumps, engine regulators, etc. |
| Philipp Loos | Making boilers, metal containers (drums), machine benches, etc. |
| Wilhelm Fredenhafen | Making special machinery for the tobacco, soap and chemical industries, etc. |

Chemicals and Explosives

I.G. Farbenindustrie A.G.

Offenbach

(3)

This is one of the smaller works of the I.G. Farbenindustrie concern, and it is believed to be engaged mainly on the manufacture of dyes and colours. It operates in conjunction with the I.G. works at Mainkur, on the opposite side of the river.

Leather, Leather Goods, Boots and Shoes

J. Mayer & Sohn

Offenbach

(3)

This is one of the largest German tanneries, which prior to the war employed approximately 1,500 workers, mainly on the production of upper and lining leathers.

August Hoffmann/.

OFFENBACH ON MAIN (contd.)

Centres of home workers, which are generally included in the Offenbach leather and leather goods industry, are the nearby localities of Bieber, Bürgel, Heusenstamm, etc.

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OLDENBURG (Oldenburg) (Continued)

Marshalling Yards. Oldenburg (3)

The marshalling yards to the West of the main railway station are capable of handling 2,000 wagons per 24 hours. Most of the goods traffic to and from Wilhelmshaven must pass through these yards.

Railway Repair Shops. Oldenburg (3)

These repair shops, which adjoin the main railway station, undertake mainly the repair of goods wagons.

-----OO-----

OPLADEN (Rhineland)

51° 5' N. 7° E: 310 miles: (20,000)

Opladen is 12 miles North of Köln on the River Wupper 6 miles from its influx into the Rhine. The town is on the railways connecting Köln with Dusseldorf and with Wuppertal, and there are important railway-repair shops. There are two engineering works, but apart from these the railway Opladen has no industries of note.

Transportation

Railway Repair Shops. Opladen (2)

These are large repair shops which are believed to employ some 4,000 workers, and repair passenger coaches and all kinds of rolling stock.

Engineering and Armaments

J. & W. Müller Opladen (3)

The J. & W. Müller Metallwarenfabrik are makers of electric welding apparatus and electrodes. They specialised before the war also in sprays and atomizers for clinical use.

Mersch & Neuss Opladen (-)

This firm manufactures bicycles and bicycle components.

-----OO-----

O P P A U (Baden)

See under Mannheim.

-----OO-----

/OPPELN

ORTELSBURG (East Prussia)

53° 35' N. 21° E: 900 miles: (15,000)

Ortelsburg, which is in the Southern area of the Province of East Prussia, and in the region of the Masurian Lakes, is mainly concerned with agriculture and apart from flour-milling has no other industries.

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OSCHERSLEBEN (Province Saxony)

Oschersleben is 20 miles West-south-west of Magdeburg and 10 miles North-east of Halberstadt. The only industry of note is the important aircraft assembly works.

Aircraft and Aero Engines

AGO

Oschersleben

(2)

The AGO Flugzeugwerke G.m.b.H, which belonged to the Gesellschaft für Elektrische Unternehmungen A.G. now in turn taken over by A.E.G. have a fighter aircraft works in Oschersleben, of the first importance. Several thousand workers are reported to be employed. Early in the war it built Me 109's under license, but was turned over in 1942 to F.W. 190's, for which it is now one of the smaller assembly units. The factory is largely self-contained as regards the manufacture, finishing and assembly of the major airframe components.

O S N A B R Ü C K (Hannover)

52° 15' N. 8° 5' E: 350 miles: (100,000)

Osnabrück is a vital railway junction. It is on the main railway line from Berlin through Hannover to Holland, which is here crossed by a second main line leading North-eastwards from the Ruhr to Bremen and Hamburg. The iron and steel rolling mills and the non-ferrous metal plant are both of major importance, as are also the blast furnaces and coking plant of the Klöcknerwerke in the industrial settlement of Georg Marienhütte, which lies 5 miles to the South of Osnabrück. The town has several engineering works of lesser importance, and also large cotton-spinning and weaving mills, and a paper factory. There is an inland harbour which connects with the Mittellandkanal.

Transportation

Inland Harbour Osnabrück (3)

The Mittellandkanal passes from West to East approximately 9 miles to the North of Osnabrück. A branch leads from the inland harbour and joins the main canal to the Northwest of the town. The inland harbour is in the North-eastern quarter of Osnabrück immediately North of the main railway line to Holland. The annual turnover before the war amounted to 500,000 tons.

Railway Junction Osnabrück (2)

The main railway station is in the centre of the town and is on two levels, the line from the Rhineland to Bremen passing over the Berlin-Holland line by means of a broad viaduct. Both of these railways are highly important trunk routes, the first being the most direct route from Northern Germany to the Dutch seaboard, and the second being the main connection of the Ruhr, the Rhineland and Western Germany with Bremen, Hamburg and the German North Sea and Baltic ports. The two main tracks are also directly connected by several subsidiary lines.

Marshalling Yards Osnabrück (2)

The chief marshalling yards, which have a capacity for 5,000 wagons per 24 hours, are situated to the East of the town centre alongside the main East to West track, and within half a mile of the railway crossing. A goods station with extensive loading facilities is adjacent to the marshalling yards.

Railway Repair Shops Osnabrück (3)

These repair shops, which employ some 1,400 workers and undertake mainly the repair of goods wagons, are alongside the railway line to Bremen to the North of and within half a mile of the main railway station.

/Public Utility Services.

OSNABRÜCK (contd.)

Iron and Steel

Klößkner

Georgs-Marien
Hütte (1)

The Klößkner Werke A.G. have large iron and steel works at Georgs-Marien Hütte, 5 miles to South of Osnabrück. These include four blast furnaces with adjacent Siemens-Martin steel plant. The capacity is estimated to be 500,000 tons of pig-iron and 850,000 tons of steel per annum. The works include a large coking plant (see under Solid Fuels) and a 30 MW power station (see under Public Utility Services). The rolling mills and hammer works of the Klößkner concern, which are situated in Osnabrück itself, are mentioned below under Engineering and Armaments.

Non-Ferrous Metal Manufacture and Fabrication

Kupfer & Drahtwerk

Osnabrück (2)

The works of the Osnabrücker Kupfer- & Drahtwerk A.G. occupy an area of more than one square kilometre in the Northern quarter of the town. They are now reported to belong to the Klößkner Werke A.G. This plant is one of the leading German producers of electric cables of all kinds, from telephone and telegraph to high-tension overhead cables. The copper refinery has an estimated annual capacity of 25,000 tons and the plant is now also equipped for aluminium fabrication. The works include rolling mills and wire-drawing plant, both for copper and aluminium, and a rubber and vulcanising plant, which manufactures the insulation covering from the raw rubber. They more than doubled the number of their workers during the five years prior to the war and were employing some 3,500 in 1939. A section of these large works is now reported to be specialising in brass shell cases and fuses.

Engineering and Armaments

Klößkner

Osnabrück (2)

The rolling mills and hammer works of the Klößkner concern are on the Eastern side of the town North of and alongside the main East to West railway line. They include an open-hearth steelworks, iron and steel foundries, press and hammer shops, and rolling mills. Their products include railway wheels, bogies, and railway point installations, of which they are one of the principal suppliers to the German railways. They are now reported to be making shells of all calibres, and gun mountings, chiefly for naval use. They have also been identified

/as

PADERBORN (Westphalia)

51° 45' N. 8° 45' E: 380 miles: (39,000)

Paderborn is in the Eastern area of Westphalia on an important railway line which leads from Saxony and Central Germany to Hamm and the Lower Rhineland. It is a junction for three minor branch lines serving the agricultural districts of Lippe and Eastern Westphalia, and there are important railway workshops in the town. Apart from these the activities of Paderborn are mainly connected with the marketing of cattle and agricultural produce.

Transportation

Railway Repair Shops Nordbahnhof (3)

The repair shops in the Northern part of Paderborn are alongside the branch railway leading to Bielefeld. These workshops employ some 2,400 workers and repair passenger coaches and goods wagons.

Railway Repair Shops Paderborn (3)

The second repair shops are situated close to the main railway station in the Southern quarter of the town. These are chiefly locomotive repair shops and employ some 1,500 workers.

Public Utility Services

Distributing Sub-station Paderborn (3)

An important distributing substation is situated at Paderborn. It is the terminus of a 220-kV line, which, starting from the main switching station at Brauweiler, West of Köln, transmits power to the substations at Wesel (Nieder Rhein), Ibbenbüren, and Paderborn, which are all distribution points. Paderborn, 200 miles distant by this route, is the terminus of the line.

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PARCHIM (Mecklenburg)

53° 25' N. 11° 50' E: 520 miles: (16,000)

Parchim is in the Southern area of Mecklenburg 25 miles South-east of Schwerin. It is a railway junction where two minor branch lines cross, and is a centre for the surrounding agricultural district. There is a large cattle market, but no industries of importance.

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/PASSAU

PEINE (contd.)

Iron and Steel

Ilseeder Hütte A.G. Peine (1)

These important iron and steel works have 6 blast furnaces and a coking plant. They have an annual capacity of 600,000 tons of pigiron and 750,000 tons of crude steel, and are equipped to produce special shapes, piles, girders and joists and possibly also shell forgings. This company which works in close cooperation with the Hermann Goering concern, owns and is the chief exploiter of the iron-ore resources of the Salzgitter district on the Northern edge of the Hartz Mountains. Salzgitter is 25 miles to the South of Peine.

-----oO-----

PEISKRETSCHAM (Silesia)

50° 20' N. 18° 35' E: 820 miles: (8,000)

Peiskretscham is 5 miles North of Gleiwitz on the railway line leading from Oppeln to the Upper Silesian mining district. Its importance is due to the large railway marshalling yards.

Transportation

Marshalling Yards Peiskretscham (2)

The Peiskretscham marshalling yards are capable of handling up to 5,000 wagons per 24 hours. Lines radiate from this focal point at the entrance to the Upper Silesian industrial district to the three neighbouring centres of Gleiwitz, Hindenburg, and Beuthen which all lie within a ten-mile radius from Peiskretscham. A large proportion of the Upper Silesian goods traffic passes through these important yards.

-----oO-----

PETERSDORF (Silesia)

50° 50' N. 15° 35' E: 685 miles: (4,700)

Petersdorf is 8 miles South-west of Hirschberg in Lower Silesia. It is on a branch railway line from Hirschberg to Schreiberhau in the Riesengebirge, and is a tourist resort. Apart from the explosives factory, there are no industries of importance.

/Chemicals and Explosives

PETERSDORF (contd.)

Chemicals and Explosives

Explosives Factory

Petersdorf

(3)

It has been reported that an explosives factory has been recently established at Petersdorf on the South side of the railway line near to the railway station of Nieder Petersdorf. The building which is being used for this purpose is said to have been formerly an artificial-silk factory and may possibly be the new factory which the Schlesische Zellwolle A.G. of Hirschberg are known to have begun erecting in 1938. In addition to the factory building there are large bunker installations for the storage of explosives. 800 workers are said to have been employed in 1943.

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PFORZHEIM (Baden)

48° 55' N. 8° 40' E: 430 miles; (80,000)

Pforzheim is 15 miles South-east of Karlsruhe at the Northern end of the Black Forest. It is on the main railway line from Karlsruhe to Stuttgart, and is the junction for two minor branch lines leading South into the Black Forest district.

Pforzheim is the centre of the precious, semi-precious, and imitation jewellery industry. It is also one of the chief centres for clock and watch making, which is a speciality of the Black Forest region of Baden. These industries were formerly carried out largely in the homes of the individual workers, and it may be said that almost every house in this city is a small workshop, but there are two factories built on a larger scale. Gold and silver refining is carried out in Pforzheim in connection with this jewellery trade.

As was the case during the 1914-1918 war, most of the factories and workshops of Pforzheim will have now been turned over to the manufacture of precision parts for instruments, small-arms components, fuzes, clockwork movements, and similar products for which this specialist labour and plant are suited.

Non-Ferrous Metal Manufacture and Fabrication

Scheideanstalt

Altstädtischer
Kirchenweg

Heimerle & Meule

Östl. Karl
Friedr. Str.

(3)

The Allgemeine Gold & Silber Scheideanstalt and the Heimerle & Meule K.G. are two of the largest of several gold and silver refining factories in Pforzheim.

/Engineering & Armaments

PFORZHEIM (contd.)

Engineering and Armaments

- | | | |
|--------------------------|------------|-----|
| Rodi & Wienerberger A.G. | Bleichstr. | (3) |
| Kollmar & Jourdan A.G. | Bleichstr. | (3) |

The above are the two largest of the factories in Pforzheim, and each employed some 1,200 workers before the war. These two firms normally specialise in watch cases and watch chains and are also large producers of articles of jewellery, real and imitation. Their works are close together in the Southern quarter of the town:

- | | | |
|--------------------|-----------------------|-------|
| Hohmann Moser A.G. | Westl. Karl | } (3) |
| Eugen Fessler | " Friedr. Str. | |
| | Ostl. Karl | |
| | Friedr. Str. | |
| Moriz Hausch | Durlachstr. | } (3) |
| Andreas Daub | Luisenstr. | |
| Wilhelm Wolff A.G. | Hohenzollern-
str. | |

These firms are all manufacturers of jewellery and fine metal articles. They each employed an average of 300 workers before the war and are a few of the larger of several hundred similar and smaller works, including many which can be classed as home workshops. With the exception of Wilhelm Wolff, whose factory is in the Northern quarter of the town, the above works are in the central area South of the railway line.

All these plants are now believed to be engaged on the manufacture of precision parts of instruments, fine aircraft and armament components, fuzes, and similar metal parts.

- | | | |
|-------------------|------------------------|-------|
| Weber & Aeschbach | Museumstr. | } (3) |
| Ambros Nirschl | Werner
Siemens Str. | |

The above are examples of a large number of watch manufacturers, mostly of small individual size. These works are now mainly engaged on making watches, clockwork movements etc., and safety fuzes for military requirements.

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/PIESTERITZ

PIESTERITZ (Province Saxony)

51° 55' N. 12° 35' E: 545 miles: (10,000)

Piesteritz, which is 2 miles West of Wittenberg, is important as the site of the large chemical works, the adjacent electric power station and a rubber factory.

Public Utility Services

Electric Power Station Piesteritz (3)

The thermal power station belonging to the chemical plant described below has a capacity of 40 MW.

Chemicals and Explosives

Stickstoffwerke Piesteritz (1)

The large chemical works of the Mittel-deutsche Stickstoffwerke A.G. were merged into the Bayerische Stickstoffwerke A.G. and are now associated with the Ammoniak-Werke Merseburg G.m.b.H. a subsidiary of the I.G. Farben concern. The Piesteritz works are important producers of nitrogenous fertilisers, notably nitro-phoska and calcium cyanamide. Nitro-phoska is a combined nitrogen-phosphorus-potash fertiliser. The production of calcium cyanamide for the two plants, Piesteritz and Trostberg in Bavaria, is believed to be 125,000 tons per annum. There is also a plant at Piesteritz for the manufacture of concentrated nitric acid, of which the production is 60 tons daily. These works are also reported to be the largest producers of phosphorus in Europe. In 1932 it was reported that the annual production was approximately 30,000 tons. There are three 3-phase furnaces, each consuming 12,000 kW. In normal times a large part of this phosphorus was sent to Wolfen for the manufacture of phosphoric acid, itself used for making nitro-phoska. Phosphorus is used for the manufacture of incendiary bombs, tracer/incendiary S.A.A., simple tracer S.A.A., and larger-calibre tracer shells made with pyrotechnic compositions. Fire-raising ammunition is almost entirely dependent on phosphorus. It is also used in smoke-producing shells for ranging purposes. These chemical works are on the Northern bank of the Elbe on the Western side of Piesteritz.

/Rubber

PIESTERITZ (contd.)

Rubber and Tyres

Gummiwerke Elbe

Piesteritz/Klein-(2)
wittenberg

The Gummiwerke Elbe A.G. have two factories, one in Piesteritz and one in Kleinwittenberg between Piesteritz and Wittenberg. Before the war this firm produced bicycle and motorcycle tyres, footwear, and general rubber goods. The plant is now believed to be making fuel-tank covering, respirator face-pieces, and protective clothing. The Piesteritz factory includes a reclaim plant with a capacity of 2,500 tons per annum. At the end of 1943 some 2,000 workers were employed. It is thought possible that the civilian footwear production has now been transferred to the Kleinwittenberg factory. The Gummiwerke Elbe A.G. is mainly owned by Felten and Guillaume of Cologne.

-----oO-----

PILLAU (East Prussia)

54° 40' N. 19° 55' E: 860 miles: (16,000)

Pillau is some 25 miles West of Königsberg on the Frische Nehrung, the narrow tongue of land between the Baltic and the Frisches Haff, a wide lagoon which forms the entrance to the harbour of Königsberg. Pillau serves as an advanced port for Königsberg. There is a ship-repairing depot as well as a fishing harbour of some importance.

Shipbuilding

Schichau

Pillau

(3)

The Schichau concern, of Danzig, which also has important shipbuilding yards in the port of Königsberg, have a well-equipped subsidiary yard at Pillau. There is a floating dock of 147 feet length, and the works are believed to be mainly engaged on the repair of naval vessels and auxiliaries.

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/PINNEBERG

PINNEBERG (Holstein)

53° 40' N. 9° 48' E: 445 miles: (13,000)

Pinneberg is situated 12 miles N.W. of Hamburg, on the main Hamburg-Flensburg-Danish railway route.

Rubber and Tyres

C.Otto Gehrckens Leder u.
Riemenwerke

Pinneberg (-)

This firm employed 350 workers before the war on leather and balata belting, electrical insulation, and mechanical rubber goods.

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PIRMASENS (Bavaria)

49° 10' N. 7° 35' E: 380 miles: (50,000)

Pirmasens is in the South-western corner of the Bavarian Palatinate and 15 miles East of Zweibrücken. It is at the terminus of a branch railway line. The industry of the town has been concentrated on the manufacture of boots, shoes, and leather goods, and it claims to be chief centre of the German leather industry. There are several hundred boot and shoe factories in the town, most of them small but in the aggregate forming a production unit of the greatest importance to this branch, and employing some 30,000 workers.

Pirmasens manufactured in peacetime chiefly the cheaper and lighter varieties of boots and shoes, but it is believed that the town is now an important supplier of footwear for the armed forces. There are a number of makers of machinery and implements for boot and shoe making, but no other branch of industry is represented on any large scale.

Leather

Eduard Rheinberger A.G. Schachenstr. (3)

Neuffer Ago & Goodyear G.m.b.H. Pirmasens (3)

These firms are two of the largest boot and shoe factories in Pirmasens. They each employ some 2,000 workers, and are believed to be making army footwear.

Gebr. Fahr A.G.	Güterbahnhof	} (3)
Ludwig Kopp A.G.	Bahnhofstr.	
Kaiser & Cie.	Buchsweilerstr.	
Emil Neuffer	Luisenstr.	
Carl Semler	Allee Str.	

The above are examples of a large number of medium sized boot and shoe factories, each employing from 200 to 400 workers.

-----oOo-----

/PIRNA

PIRNA (Saxony)

51° N. 13° 55' E: 610 miles: (36,000)

Pirna is 12 miles South-east of Dresden on the left bank of the Elbe, and on the main railway line from North Germany to Prague and Vienna. In addition to the factories described, there is a considerable glass-making industry, and a number of manufacturers of paper, chiefly writing paper.

Engineering and Armaments

Döhlen A.G. Pirna (3)

The Sächsische Gusstahl Werke Döhlen A.G., whose iron and steel works are in Dresden, have a steel rolling plant at Pirna.

Textiles, Rayon, Pulp and Paper

Zellstoffwerke Pirna (3)

The Aschaffenburger Zellstoffwerke A.G. the parent works of which are in Aschaffenburg, have a large factory in Pirna producing viscose rayon. This concern, which is an important producer of cellulose for paper making, has recently greatly developed its production of viscose for artificial silk, and two of its factories (Pirna and Stockstadt) have been largely concentrated on this trade.

Küttner Heidenauerstr. (3)

The Fr. Küttner A.G. have an important rayon-spinning mill in Pirna, which is believed to have employed some 3,500 workers before the war. Their output of viscose rayon and cuprammonium yarn was then estimated at 17 tons per day.

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PLANITZ (Saxony)

50° 40' N. 12° 30' E: 550 miles: (25,000)

Planitz is 3 miles South of Zwickau. The industry consists mainly of textiles, in particular shirts and knitted goods, and there is also a factory which specialises in the manufacture of wire brushes of all kinds. None is individually of importance.

-----oOo-----

/PLAUEN

PLAUEN (Saxony)

50° 30' N. 12° 10' E: 54.0 miles: (113,000)

Plauen is in the South-western corner of Saxony. It is an important railway junction on the routes from North to South through Hof and Eger. It is the centre of the hilly district of the Vogtland, and is built in the valley of the River Elster. In addition to textiles (in particular shirt-making, knitted wear, and lace), which are normally the main industry, and a large rayon factory, there is an important engineering works and a number of other industries, including printing works, piano and furniture factories, and makers of leather goods.

Transportation

Railway Junction Plauen (3)

At the main railway station, which is in the Northern part of Plauen, the main railway line from Leipzig and Dresden divides into two, one branch leading to Hof and the other to Eger. These are both main lines which lead through the central German hills to Northern Bavaria. A branch line leading from Gera follows the River Elster and passes along the South-eastern outskirts of Plauen to join the main line to Oelsnitz and Eger 4 miles to the South.

Public Utility Services

Gasworks Plauen (3)

In 1936 the municipal gasworks made 350 million cu. ft. of gas.

Engineering and Armaments

VOMAG Granachstr. (2)

The Vomag Maschinenfabrik A.G. are an important engineering works with a wide range of products. They were originally makers of printing, textile, and lace-making machinery, but for some years before the war were already noted for their own type of heavy transport vehicle. They are now believed to be making Diesel engines and to be producing stationary Diesel engines of 70-150 h.p. and possibly also tanks and tank engines, and various types of military transport, such as 18 ton semi-tracked troop carriers, in addition to machine tools and precision boring and grinding machinery. Their works are on the South-western outskirts of the town on the right bank of the River Elster and on the railway line from Plauen to Eger. They employ some 8,000 workers.

/Textiles

PLAUEN (contd.)

Textiles, Rayon, Pulp and Paper

Zellwolle A.G. Plauen (3)

The Sächsische Zellwolle A.G. are makers of viscose staple fibre, of which their works have a capacity for 60 tons per day. The factory is built to the South-east of the town between the River Elster and the branch railway to Oelsnitz and Gera.

Baumwollspinnerei Hans Sachs Str. (3)

The Plauener Baumwollspinnerei A.G. have a cotton spinning mill with 50,000 spindles. They employed some 400 workers before the war.

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PLETTENBERG (Westphalia)

51° 13' N. 7° 52' E: 345 miles: (8,000)

Plettenberg is a small industrial town South of Hagen; 12 miles East of Iddenscheid and 12 miles South-east of Altena, on a short branch railway from the main Dortmund-Hagen-Siegen railway route. Its situation is typical of the industrialised valleys South of Hagen, with industrial undertakings situated along the valley manufacturing screws and bolts, railway equipment, and other light metal products.

Non-Ferrous Metals

Messingwerk Plettenberg G.m.b.H. Plettenberg (-)

This firm are copper and brass rollers and fabricators and prior to the war employed some 300 workers. Nothing is known regarding the firm's present rate of activity.

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P O R Z (Rhineland)

See under KÖLN (COLOGNE)

-----oO-----

PÖSSNECK (Thuringia)

50° 40' N. 11° 35' E: 510 miles: (16,000)

Pössneck is 10 miles South-east of Saalfeld on the railway line from Saalfeld to Gera. There is a small textile and leather industry, but no factories of importance.

-----oO-----

/POTSDAM

PREMNITZ (contd.)

I.G. Farbenindustrie (contd.)

A comparatively small explosives factory existed during the last war near to PLAUE on the river Havel 9 miles South-east of Premnitz. It is now reported that an explosives factory, said to be State owned and on a large scale, is in operation at or near this site. No reliable figures are available as to production. A small subsidiary plant of the I.G. Farben has also been reported as having been erected during the war at Döberitz, a small village one mile South of Premnitz (not to be confused with the military camp of Döberitz 30 miles East of Premnitz and within 15 miles of Berlin).

Textiles, Rayon, Pulp and Paper

I.G. Farbenindustrie	Premnitz	(3)
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Before the war the Premnitz factory of the I.G. concern was primarily engaged on producing viscose rayon and staple fibre. It had an output of 60 tons per day. Ground reports suggest that the works was still operating at full capacity in 1942.

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PRENZLAU (Brandenburg)

53° 20' N. 13° 50' E: 600 miles: (27,000)

Prenzlau is in that area in the Northern part of the Province of Brandenburg which is known as the Uckermark. It is 55 miles North of Berlin, and 23 miles West of Stettin. It is an agricultural centre and has a large cattle market. There are a few small engineering works and iron foundries, and also a margarine factory, but no industry of importance.

-----oO-----

QUEDLINBURG (Province Saxony)

51° 45' N. 11° 10' E: 485 miles: (28,000)

Quedlinburg is 10 miles South of Halberstadt and at the Eastern end of the Hartz Mountain area. It is chiefly known as the centre of the nursery-gardening and seed-growing industries, and is particularly important as the largest producer of sugar-beet seed. The manufacture of sugar from beet was first developed in the Prussian province of Saxony (largely by Gustav Adolf Dippe, the founder of Gebrüder Dippe A.G.) and this is still one of the principal sugar-beet areas. There are a number of engineering works in Quedlinburg, including several makers of thermometers for industrial use, and a railway-wagon factory.

Engineering and Armaments

Ernst Meyer & Co. Quedlinburg (-)

The Ernst Meyer & Co. Eisenbahn-Material G.m.b.H. Waggonfabrik are small builders of railway wagons.

(3) Wegener & Mach Quedlinburg } (3)
Baecker & Spengler Rambergsweg }

Wegener & Mach and the Deutsche Thermometerfabrik Baecker & Spengler are two of several firms in Quedlinburg specialising in thermometers of all types, including those for use in furnaces and steam engines and for other industrial purposes.

Food Stuffs

Gebr. Dippe A.G. Neuer Weg } (3)
Heinrich Mette & Co. G.m.b.H. Stumpsburger }
-str.

The above firms are two of the largest of several seed growers in Quedlinburg. They are important suppliers of sugar-beet seed, of which Quedlinburg is estimated to produce 40 per cent of the total German requirements.

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RADEBERG (Saxony)

51° 5' N. 13° 55' E: 610 miles: (16,000)

Radeberg is 10 miles North-east of Dresden on the main railway line from Dresden to Bautzen and Silesia. The principal manufacture is glass, particularly for use in lamp-fittings, mirrors, and furniture. There are several furniture makers, and an engineering firm of some importance.

Engineering and Armaments

Eschebach Werke A.G. Radeberg (3)

The Eschebach Werke A.G. are makers of cooking ranges, kitchen furniture and fittings, and domestic appliances. Their works include an iron foundry. They employed some 1,200 workers before the war. They are now reported to be large suppliers of field cookers, food containers, and other similar equipment for the armed forces

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RADEBEUL (Saxony)

51° 5' N. 13° 40' E: 600 miles: (37,000)

Radebeul is on the right bank of the Elbe 5 miles downstream from Dresden, and is one of a number of settlements which lie along the Elbe between Dresden and Meissen. Radebeul, which now includes the adjoining suburbs of Kotschenbroda and Niederlössnitz, is largely a residential offshoot of Dresden, but there is also considerable industrial activity.

Public Utility Services

Electric Power Station Niederwartha (2)

The Niederwartha or Elbtal pumped-storage station of the Energie-Versorgung-Gross-Dresden A.G. (EGRO), lies 6 miles North-west of the centre of Dresden on the left bank of the Elbe. It is a peak-load and emergency standby station with an average annual output of 160 million kWh and an installed capacity of 80 MW. There are two reservoirs, with a difference in altitude of 470 feet. Water from the upper reservoir passes through 4 concrete pipes to the intake chamber and from thence through a penstock to the power house.

In the generator hall 4 turbo-generator sets are installed (with provision for 8). Each generator motor is connected to a generator transformer for 10-20-100 kV. An indoor 20-kV substation supplies 8 cables to Dresden municipality and the ASW plants, and 2 cables to Freital. An outdoor 100-kV substation supplies 4 direct double-circuit lines to Chemnitz North, Lauta, Hirschfelde, and Dresden South.

Gasworks/

RADEBEUL (Contd.)

Public Utility Services (Contd.)

Gasworks

Radebeul (3)

The Dresdner Gas-Wasser-u. Elektrizitätswerk A. G. (DREWAG) supplies gas through the Verbandsgaswerk Elbtal to Radebeul. 111 million cubic feet of gas were sold in 1936.

Engineering and Armaments

Curt Holzberger

Kotitzerstr. (3)

This firm specialises in the manufacture of wrenches and spanners, and is the leading German manufacturer of these articles.

Gebler Werke A. G.

Martin
Mutschmann Str. (3)

This firm of iron founders specialises in cast- and wrought-iron containers and apparatus, chiefly for the chemical, oil, and food stuffs industries. They employed some 500 workers before the war.

Auerbach

Stosch
Sarrasani Str. (3)

The Dresdner Werkzeugmaschinenfabrik Carl Auerbach & Sohn G.m.b.H. are makers of precision lathes and machinery, including apparatus for instrument making and the optical industry.

August Koebig

Meissenerstr. (-)

The Radebeuler Maschinenfabrik August Koebig G.m.b.H. are makers of machinery for the paper-making and textile-finishing industries. They employed some 300 workers before the war.

Chemicals and Explosives

Von Heyden A. G.

Meissenerstr. (3)

The Chemische Fabrik von Heyden A. G. employed some 2,000 workers before the war, and are important manufacturers of pharmaceuticals and medical preparations, chlorine products, phenol, electrolytic alkali, and various other chemicals for industrial use. It was reported in 1942 that this firm was making large quantities of phosgene gas, ostensibly for de-lousing purposes.

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RAGNIT (East Prussia)

See under Tilsit.

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RASTATT/

R A S T A T T (Baden)

48° 50' N. 8° 15' E: 410 miles: (15,000)

Rastatt is 12 miles South of Karlsruhe on the main North to South railway line along the Rhine valley to Basle. It is the junction for a connecting line which crosses the Rhine 3 miles to the West of Rastatt and joins the railway following the Western bank of the river to Strassburg. A branch line leads South-east from Rastatt into the Black Forest region. There are a number of small industries, including the making of special paper for blue prints and drawing-office use, coloured papers, and stationery. There is also a clothing factory. None of these is individually of importance, but the optical instrument firm of Ernst Leitz G.m.b.H. of Wetzlar has a branch in the town.

Engineering and Armaments

Ernst Leitz G.m.b.H. Rastatt (3)

The important optical-instrument concern of Ernst Leitz G.m.b.H., whose parent works are at Wetzlar, have a branch factory in Rastatt making frames, stands, and other accessories for optical instruments.

Waggonfabrik Rastatt A.G. Rastatt (3)

The Waggonfabrik Rastatt A.G. are makers of main-line wagons and they also build tram-cars. In 1938 some 500 workers were employed.

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R A S T E N B U R G (East Prussia)

54° 5' N. 21° 25' E: 915 miles: (17,000)

Rastenburg is 60 miles South-east of Konisberg in the central area of the Province of East Prussia. It has a large cattle market and is the centre of a rich agricultural district. Other than a sugar refinery and a flour mill, there is no industry of importance.

Food Stuffs

Zuckerfabrik Rastenburg (-)

The Zuckerfabrik Rastenburg A.G. is a sugar refinery whose annual output rose to 8,000 tons in 1938. Some 700 workers were employed during the sugar-beet season.

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/RATHENOW

RATHENOW (Brandenburg)

52° 35' N. 12° 20' E: 535 miles: (31,000)

Rathenow is 40 miles West of Berlin on the main line to Hannover. It is on the right bank of the river Havel 20 miles South East of its confluence with the Elbe at Havelberg. Rathenow's chief industry is the manufacture of optical instruments and spectacles. The firm of Emil Busch is one of the pioneers of the German optical industry. During the last century this manufacture became a speciality of the town, and there are now a large number of optical instruments (and particularly spectacle) manufacturers. In peacetime no other industries are represented on any large scale, but the aircraft works have now become important.

Five miles South of Rathenow at Premnitz there is an important I.G. Farben plant, which is dealt with separately under the heading Premnitz.

Aircraft

Arado Rathenow (2)

The Rathenow works of the Arado Flugzeugwerke G.m.b.H. are an air frame components plant producing wings, tail units and undercarriages for Arado seaplanes (ar.95 and 196). These components are delivered to the Brandenburg works of Arado for Assembly. Some repairs are also carried out. The number of workers employed in 1941 was 3,500.

Engineering and Armaments

Emil Busch Brandenburgerstr. (3)
Emil Busch Am Stadthof (3)

The Emil Busch A.G. Optische Industrie is an old established firm of optical instrument and lens manufacturers, which is now owned by Carl Zeiss of Jena. Their normal range of products include all kinds of camera and other lenses, complete cameras, optical bomb-sights, telescopes, field glasses, microscopes, and other optical instruments. Their chief works are in the centre of the town, and there is a subsidiary factory chiefly for glass moulding, which is situated "Am Stadthof" on the bank of the Havel.

The Busch works also make the precision metal parts for the optical instruments. Some 2,000 workers were employed before the war and although reports state that this number has now been doubled, the Busch works do not compare in importance with the various Zeiss factories or with Leitz of Wetzlar.

Nitsche & Günther Dunckerstr. (3)

The Nitsche & Günther Optische Werke K.G. are makers of optical instruments and special machinery for this industry, including lens polishing apparatus. They supply instrument components to the Busch works. They are believed to employ some 1,200 workers.

/Franz Rapsch

RATHENOW (contd.)

Franz Rapsch

Jahnstr

(3)

The Franz Rapsch Optische Fabriken A.G. employed some 250 workers before the war and is an example of a large number of small undertakings in Rathenow which specialise in the simpler forms of lenses and other optical products, chiefly as sub-contractors to larger firms. Such "manufacturers" frequently do no more than the finishing processes (grinding, polishing, etc.) which, however, are highly skilled operations.

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R A T I B O R (Silesia)

50° 5' N. 18° 15' E: 805 miles: (51,000)

Ratibor is 30 miles South-west of Gleiwitz, within 3 miles of the Polish border to the East and 6 miles of the Czechoslovakian border to the South-west. The town is built on either bank of the Oder and is on the main railway line from Oppeln to Oderberg. At Oderberg this railway joins the main West to East line connecting the Czechoslovakian and Polish coal-mining areas. The Oder, which is navigable, forms an important inland-waterway connection with Mährisch Ostrau. The principal industry in Ratibor is the Siemens-Plania factory.

Transportation

Railway Repair Shops

Ratibor

(3)

These medium-sized repair shops undertake the repair of goods wagons.

Engineering and Armaments

Siemens-Plania

Ratibor

(2)

The Ratibor factory of the Siemens-Plania Werke A.G., whose parent works are in Berlin-Lichtenberg, is now reported to have been considerably enlarged and to be employing as many as 3,000 workers. This concern is the leading German producer of carbon electrodes of all kinds.

Hegenscheit

Sandstr.

(3)

The Wilhelm Hegenscheit K.G. are manufacturers of screw-making machinery, lathes of all sizes, and other machine tools. They were reported to be employing some 1,500 workers in 1942, including P's/W. The main works of this firm are in Ratibor, but there is a branch factory, which includes an iron foundry, at Ratiborhammer, which is 10 miles North of Ratibor.

/Ganz

Ratibor (contd.)

Ganz & Co.

Ratibor

(3)

Ganz & Co., Elektrizitäts Maschinen Waggon & Schiffbau A.G. is a branch of the Ganz & Co., A.G. of Budapest. Their plant at Ratibor comprises an iron foundry and press and hammer works. The products include railway point installations, tank wagons, components, plates and frames for railway wagons and locomotives. They were reported to be employing 1,000 workers in 1943.

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R A T I N G E N (Rhineland)

See under Düsseldorf.

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R A V E N S B U R G (Württemberg)

47° 45' N. 9° 35' E: 505 miles: (33,000)

Ravensburg is 10 miles North of Friedrichshafen on the direct railway line from Ulm to Friedrichshafen. It is mainly a cattle market and agricultural centre for the dairy products of this area. In addition to the Escher Wyss engineering concern there are a few smaller engineering works, saw-mills, and makers of brushes, in particular paint brushes.

Engineering and Armaments

Escher Wyss

Ravensburg

(3)

The Escher Wyss Maschinenfabrik G.m.b.H., a branch of the well-known Swiss firm, employed some 700 workers before the war and are makers of pumps, water turbines, compressors, and paper making machines.

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R E C K L I N G H A U S E N (Westphalia)

51° 37' N. 7° 12' E: 315 miles: (88,000)

The area described here surrounds the town of Recklinghausen and lies on the northern edge of the Ruhr industrial area: it is bounded by the Rhein-Herne canal in the South and by the Dortmund-Ems canal in the North-east. In the west it extends towards Marl and Hülse.

Recklinghausen lies about 15 miles North-west of Dortmund, and includes the suburbs of Recklinghausen-Ost and Recklinghausen-Süd. The town is concerned mainly with the production of coal and coke. It is served by the Rhein-Herne canal.

Included in the area are the smaller towns of Herten with a /population

RECKLINGHAUSEN (contd.)

population of about 33,000 and Oer-Erkenschwick with 16,000.

Transportation

Railway Repair Shops Recklinghausen (3)

These extensive railway-repair shops lie to the South east of Recklinghausen about halfway between the city and Recklinghausen-Süd. They are engaged on the repair and maintenance of goods wagons.

Recklinghausen Hafen Recklinghausen-Süd (3)

The municipal harbour serving Recklinghausen and district is on the Rheine-Herne Canal just west of the sixth set of twin locks (see also under Herne).

Public Utility

Städtische Gaswerke Recklinghausen (3)

Owned by V.E.W., this municipal gasworks is on the Ruhr gas grid. It purchased and sold 161 million cubic feet of gas in 1936.

Solid Fuels

Ewald Fortsetzung coking plant Oer-Erkenschwick(3)

Owned by the Bergbau A.G. Ewald-König Ludwig (now part of Hermann Göring combine), this coking plant lies $3\frac{1}{4}$ miles North east of Recklinghausen and just South west of Oer-Erkenschwick, adjoining Ewald Fortsetzung I & III colliery. The plant consists of 200 ovens having an estimated annual dry coal capacity of 1,225,000 tons.

König Ludwig IV & V coking plant Suderwich (3)

This coking plant, also owned by the Bergbau A.G. Ewald-König Ludwig, is situated just South-east of the suburb of Suderwich about 2 miles East of Recklinghausen station. It has 60 ovens and an estimated annual dry coal capacity of 454,000 tons. Gas is supplied to the Ruhr gas grid.

König Ludwig I & II coking plant Röllinghausen (3)

The third coking plant of the Bergbau A.G. Ewald-König Ludwig lies about $2\frac{3}{4}$ miles South east of Recklinghausen station at Röllinghausen. It has 140 ovens and an estimated annual dry coal capacity of 300,000 tons.

/Recklinghausen

RECKLINGHAUSEN (contd.)

Recklinghausen I coking plant Hochlamark (3)

This coking plant, owned by the Harpener Bergbau, A.G., lies $3\frac{3}{4}$ miles due South of Recklinghausen main station. It has 60 ovens and an estimated annual dry coal capacity of 110,000 tons. Gas is supplied to the Ruhr gas grid. The adjacent coal shaft is not working, see under Recklinghausen II

"
Schägel & Eisen III & IV coking plant Langenbockum (3)

Owned by Hibernia A.G., this coking plant lies $3\frac{3}{4}$ miles due West of Recklinghausen station. It has 184 ovens, with an estimated annual dry coal capacity of 370,000 tons.

"
Schlägel u-Eisen I/II, III/IV, and V/VI colliery Recklinghausen (3)

Owned by the Bergwerksgesellschaft Hibernia A.G. Herne, these pits are divided into three groups lying about 4 miles to the West of Recklinghausen and within $2\frac{1}{2}$ miles of each other. The coking plant mentioned above adjoins pits III/IV. The total output of hard coal from these pits in 1937 amounted to 1,112,000 tons, and the number of workers was 2,500.

General Blumentahl Colliery Recklinghausen (3)

The colliery is owned by the Bergwerksgesellschaft Hibernia A.G. Herne. It comprises pits I/II/V/VI and III/IV which lie within a mile of each other directly East and South-east of Recklinghausen main station. In 1937 the output of hard coal amounted to 988,000 tons and the workers numbered some 2,400.

Recklinghausen II Colliery Recklinghausen-Sud (3)

Owned by the Harpener Bergbau A.G. this colliery lies 5 miles S.S.W. of Recklinghausen main station. In 1937, some 930,000 tons of hard coal were mined and the workers numbered approximately 1,900. The coking plant operated by this company is situated at Recklinghausen I (see above). No coal has been hauled at this latter pit since 1931.

/Ewald

RECKLINGHAUSEN (contd.)

Ewald I/II (Hilger & Hagedorn),
V, and III/IV (Schurenburg & Waldthausen), VI. Recklinghausen-
Sud (3)

Situated about $4\frac{1}{2}$ miles South-west of Recklinghausen main station, this colliery is operated on two groups, Shafts I/II/V and III/IV/VI. It is owned by the Bergbau-A.G. Ewald-König Ludwig. The output of hard coal in 1937 was 2,366,000 tons and workers numbered 4,500. Rail connection is to Recklinghausen-Sud and water connection is to West Harbour at Wanne-Eickel.

Ewald Fortsetzung Colliery Oer-
Erkenschwick (3)

This colliery is owned by the Bergbau A.G. Ewald-König Ludwig. In 1931 all shafts were out of production. It was expected to put I/II/III into production again in 1938. In 1936, the König-Ludwig IV/V took over Ewald-Fortsetzung IV/V and the hard coal output for 1937 amounted to 15,000 tons. 940 workers were employed. The colliery is situated about $3\frac{1}{2}$ miles North-east of Recklinghausen.

König Ludwig Collieries Röllinghausen
and
Suderwich (3)

Owned by the Bergbau-A.G. Ewald-König Ludwig, the colliery is divided into three groups of shafts. Groups I/II/III/IV and VII/VIII lie about 3 miles South-east of Recklinghausen main station and group IV/V (which also hauls coal from Ewald Fortsetzung IV/V - see above) lies about 2 miles East of Recklinghausen main station. The output of coal in 1937 was 2,707,000 tons and the number of workers employed was 7,000. Water connection is to the Rhein-Herne Canal.

Engineering and Armaments

Bischoff-Werke K.G. Recklinghausen-
vorm. Pfingstmann-Werke A.G. Sud (3)

This plant is situated on the eastern side and adjacent to Recklinghausen-Sud station. Production includes wheel components, narrow-gauge locomotives and waggons and goods waggons, also metal mine trams. The firm has another plant at Lüdinghausen.

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/REGENSBURG

REGENSBURG (Bavaria)

49°N. 12° 5' E: 570 miles: (87,000)

Regensburg is on the South bank of the Danube 60 miles North of Munich, and is an important railway junction and transshipment port. The Danube is navigable as far as Regensburg for barges up to 1,000 tons, and goods can therefore be carried from the Black Sea and the Balkans up to Regensburg without transshipment. This port is now of particular value in view of the large amount of Roumanian oil which is shipped to it up the Danube.

The pre-war industries of Regensburg also included shipbuilding, the manufacture of tiles, drainage pipes and stoneware, and several small engineering works. There are a number of saw-mills, and the inland port handled a large amount of timber. The Regensburg works of the Messerschmitt A.G., have been greatly developed during the war.

The VAWAG have a large alumina works at Schwandorf, 15 miles to the North on the river Nab, which flows into the Danube 3 miles West of Regensburg. These works are described under the heading of Schwandorf.

Transportation

Inland Harbour Regensburg (2)

The inland harbour is to the East of the town and on the right bank of the Danube. It has been greatly extended in recent years. In addition to the two original docks, there is now a system of four large docks further to the East opening out of an entrance basin two miles upstream from the town. This inland port is of great importance to the traffic in oil from Roumania, a large proportion of which is transhipped at Regensburg.

Railway Junction Regensburg (3)

Two important main railway lines, from Nürnberg eastwards to Passau and Vienna, and from Hof southwards to Munich, meet in Regensburg and, after passing through the railway station, diverge again to the East of the town.

Marshalling Yards Regensburg (3)

The Regensburg marshalling yards are capable of handling up to 2,000 wagons per 24 hours.

Railway Repair Shops Regensburg (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

Public Utility Service

Substation Regensburg (3)

The 110 kV long distance double circuit line from Landshut to Schwandorf, which connects to the grid of the Bayernwerk by a double circuit line to

/Amberg

REGENSBURG (Bavaria) (Continued)

Amberg, is linked to the 110 kV long distance double circuit line from Kachlet to Gebersdorf (Nurnberg) at this substation.

The projected 220 kV long distance line from Kachlet to Gebersdorf will pass through this substation. From Gebersdorf it will branch South to Ellwangen and North to the industrialized areas of Leipzig and Bitterfeld, Golpa-Zschornowitz and Diesdorf.

Liquid Fuels

Oil Storage Regensburg (2)

There are large scale oil storage facilities in the port area of Regensburg, and the numerous tanks have a total storage capacity of several hundred thousand tons. Three small oil refineries of the Ossag D.A.P.G. and Danubia are now less important as refineries than as storage depots for the large quantities of Roumanian oil which pass through this port.

Aircraft and Aero-Engines

Messerschmitt A.G. Prüfening (2)

Messerschmitt A.G. Obertraubling (2)

The Messerschmitt concern of Augsburg built their first big branch works in 1937 on a site occupying a large area to the West of the town adjacent to the former civil airport on the Southern bank of the Danube inside the bend which the river makes North of the village of Prüfening. Production began in 1938 and the plant has concentrated ever since on successive models of the Me. 109 single-engined fighter. With the expansion programme instituted in the German aircraft industry in 1942-43 output increased considerably until the effective daylight air attack of August 1943.

A second Messerschmitt plant has been established by the conversion and extension of a former G.A.F. station at Obertraubling, 4 miles to the South-east of Regensburg. This works was engaged on the assembly of the large Messerschmitt transport glider, (the Me. 321) and of the powered version of the same aircraft (the 6-engined Me. 323). The August attack on Prüfening was so effective that Me. 109 assembly was for the most part transferred to Obertraubling, while Me. 321 and 323 assembly began at Leipheim where assembly space had been acquired. Reconstruction of the Prüfening works was vigorously undertaken and production resumed. A series of raids in February 1944 inflicted such severe damage that the plant is thought likely to be abandoned. Obertraubling was bombed in the same February raids with equal effectiveness and no attempts at assembly repair work had been

/made

REGENSBURG (Bavaria) (Continued)

made by early April. Some assembly hangars are, however, still usable.

The Regensburg complex was up to August 1943 employing some 10,000 workers.

Shipbuilding

Ruthof

(3)

(2) The Regensburg yards of the Christof Ruthof K.G. are on the South quay of the Petroleum Hafen, one of the older docks of the inland harbour immediately to the East of the town. They build and repair oil barges, tugs and other small craft, and the broadside slipway has a capacity for 6 such craft to be under construction at the same time.

Hitzler

(3)

(2) The shipyards of the Theodor Hitzler Schiffswerft & Maschinenfabrik Regensburg are on the Northern side and at the entrance of the Luitpoldhafen and nearly opposite to the Ruthof yards. They have two broadside slipways with water frontages of 220 and 425 feet respectively. The types of craft are similar to those built by the Ruthof yards.

Chemicals and Explosives

Bayerische A.G.

Kelheim

(-)

(2) At Kelheim-Affecking, which is 11 miles downstream from Regensburg on the left bank of the Danube, the Bayerische A.G. für chemische & landwirtschaftlich-chemische Fabrikate have a chemical works manufacturing chiefly sulphuric acid by the contact process with an annual capacity of 16,000 tons.

Textiles, Rayon, Pulp and Paper

Zellwolle A.G.

Kelheim

(3)

(2) The Süddeutsche Zellwolle A.G. have a works at Kelheim, 11 miles South-west of Regensburg, making staple fibre and artificial wool. In 1938 the daily capacity of this works was 70 tons of staple fibre and 55 tons of artificial wool. Some 800 workers were employed.

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/REICHENBACH

REICHENBACH (Saxony)

50° 35' N. 12° 20' E: 545 miles: (33,000)

Reichenbach (Vogtland) is in the South-western area of Saxony 10 miles South-west of Zwickau on the railway line from Zwickau to Plauen. The industry is mainly textile, and there are a large number of spinning and weaving mills and cloth factories which, though individually of no great size, have a considerable aggregate production. There are several small engineering works and a firm of measuring instrument makers. There is also a large scale printing works.

Engineering and Armaments

Mass-Industrie Zwickauerstr. (3)

The Mass-Industrie G.m.b.H. are makers of micrometer gauges and precision measuring instruments of all kinds. They are of some importance in this branch.

Textiles, Rayon, Pulp and Paper

Georg Schleber Altstadt (-)

The Färbereien & Appreturanstalten Georg Schleber A.G. are dyers and textile finishers. In 1938 they employed some 1,200 workers at their two factories in Reichenbach and in Greiz, which is in Thuringia and 5 miles West of Reichenbach.

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REICHENBACH (Silesia)

50°45' N. 16° 40' E: 730 miles: (18,000)

Reichenbach am Eulengebirge is 30 miles South-west of Breslau and is on the railway line from Liegnitz via Neisse to Gleiwitz. It is mainly an agricultural centre and has a large cattle market. There are a number of cotton weaving mills, but the industry is not on a large scale.

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REIGERSFELD (Upper Silesia)

See under Blechhammer

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REINSDORF

See under Torgau

-----oO-----

REMSCHIED (contd.)

Deutsche Edelstahlwerke (contd.)

total special steel capacity of this works is 38,000 tons per annum. The complex is thought to be by far the most important industrial concern in Remscheid. The alloy-steels which are manufactured include silicon-manganese, chrome-tungsten, nickel-molybdenum and vanadium-cobalt, as well as various types of cutting steels. 5,500 workers are believed to have been employed by the two plants in June 1942.

Bergische Stahl, Walz-u. Hammer- Werke Julius Lindenberg. Hasten (3)

This is a small works engaged on the manufacture and fabrication of special steel.

Gewerkschaft Reckhammer & Co. Lüttringhausen (3)

A small steelworks with a capacity of 18,000 tons of special steel per annum.

Engineering and Armaments

Alexanderwerk A. von der Nahmer A. G. Remscheid)
1) Kippdorfstr.) (2)
2) Königstr.)

The plant is on a site of 301,000 square metres with approximately 56,000 built-up. Besides a branch factory at Witten, the company has two plants in Remscheid which produced, prior to the war, agricultural machinery, machines for the chemical industry, and machine tools. Workers are now estimated to number 2,600 and production is concerned with special machinery for the chemical industry, M.T. components, S.A. components, and some agricultural implements. It is also reported that aircraft parts are being produced. The plant comprises casting and tempering foundries, stamping and pressing shops, enamelling and galvanising works, and machine shops.

The two works are known as

- 1) Alexanderwerk
- 2) Luisenhütte

Walter Hentzen & Co. Remscheid (3)

This factory, formerly known as Bergische Werkzeugindustrie W. Hentzen & Co., occupies an area of 5,100 square metres in a site of 15,500 square metres, South-east of Remscheid main station. Plant includes machine shops and a tempering foundry. Workers are estimated to number some 700. The works specialises in the production of small precision tools.

/Westdeutsche

REMSCHIED (contd.)

Westdeutsche Präzisions- Werkzeugfabrik	Remscheid, Vieringhausen	(3)
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This plant specialises in the manufacture of twist drills and small tools. It lies North-west of Gùldenwerth station.

Fritz Hùrxthal	Remscheid, Kirchhofstr.	(-)
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Planø milling machines, boring bars and cutter heads all produced by this firm, which occupies a site of 3,000 square metres in an area of 5,300 square metres, just North of the Remscheid main station. Approx. 150 workers were employed before the war.

W.F.Klingelberg Söhne	1) Remscheid-Berg- hausen Berghauserstr. 54/62	} (3)
	2) Remscheid- Preyersmùhle	

This firm operates three factories in all. Works I produces machine knives and shear blades. Works II, iron and steel forgings, grinding and polishing machines; a third works at Hùckeswagen, South-east of Remscheid manufactures machine tools. Prior to the war this firm made a special type of bevel gear grinder. Prior to the war, 500 workers were employed.

A.Ludwig Steinmetz A.G.	Remscheid, Berghauserstr. 12a	(3)
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450 workers are believed to be employed here on the manufacture of precision tools. These include milling cutters, reamers centre and twist drills, threading tools, and special measuring equipment.

David Kotthaus A.G.	Remscheid	(3)
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A variety of tools and machine tools are manufactured by this firm which is situated just North of the Remscheid main station.

Friedrich Wilhelm Daum	Remscheid- Bliedinghausen	(3)
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This works makes railway equipment, safety and other high grade apparatus, railway switch points and machinery for the mining industry. The works consist of machine, wood-working, and hammer works.

/Albert

REMSCHIED (contd.)

(S) "Rheum" Rheinische Werkzeug-und Metallwarenfabrik G. m. b. H. Remscheid-Lättringhausen (-)

Pressing, stamping, drawing, and turning tools, grinding and polishing wheels etc., are produced by this firm. There were some 300 workers before the war.

(S) Mannesmannröhren-Werke A. G. Remscheid-Bliedinghausen (3)

The Remscheid branch of this firm is situated just South-west of the Menninghausen goods station. The plant includes three rolling mills producing steel tubes.

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(S) RENDSBURG (Schleswig Holstein)

54° 20' N. 9° 40' E: 455 miles: (20,000)

Rendsburg is on the Kiel Canal 16 miles West of Kiel. The town is intersected by the River Eider, which joins the Kiel Canal at this point. Rendsburg is on the main line Northwards from Hamburg to Flensburg and Denmark, which here crosses the Kiel Canal. It is an important agricultural centre and is the principal livestock market for the cattle producing area of Schleswig Holstein. Apart from railway repair shops there are no industries of importance.

Transportation

(-) Railway Junction. Rendsburg (3)

The railways from Hamburg (via Neumünster) and from Kiel meet at Rendsburg and lead Northwards to Flensburg and Denmark. The lines cross the Kiel Canal and the River Eider on bridges which are inside the town area. A branch line leads Westwards from Rendsburg to Husum on the North Sea coast.

(-) Railway Repair Shops Rendsburg (3)

These repair shops undertake the repair of locomotives and goods wagons.

Chemicals and Explosives

(-) Chemische Düngstoffabrik Rendsburg (3)

The Chemische Düngstoffabrik Rendsburg A. G. have large superphosphate works at Rendsburg. Their production of sulphuric acid (100 per cent) is given as 1,590 tons per annum. In 1928 their annual output capacity was given as 10,000 to 20,000 tons of 100 per cent acid.

REPELEN/

REPELEN-BAERL (Rhineland)

51° 30' N. 6° 40' E: 295 miles: (15,000)

Repele-Baerl is on the left bank of the Rhine 4 miles North of Homberg. Its activities are chiefly connected with coal mining. The coal mines concerned are described under Kamp-Lintfort and Homberg respectively.

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REUTLINGEN (Württemberg)

48° 30' N. 9° 10' E: 465 miles: (38,000)

Reutlingen, which is 20 miles South of Stuttgart, has a large textile industry mainly in the hands of medium sized firms. Cotton spinning and weaving and hosiery manufacture are each represented by several such factories, and various textile fancy goods are also produced. There is a technical training college and research institute devoted to the textile industry.

Reutlingen has also several engineering firms but none is individually of great importance.

Engineering and Armaments

Ernst Wagner Reutlingen (3)

The Ernst Wagner Apparatebau are makers of trucks and transporters for use in factories, and of metal containers, chiefly for chemical and dye works.

Textiles, Rayon, Pulp and Paper

Gminden Reutlingen (-)

The Ulrich Gminden G.m.b.H. are cotton spinners and weavers. They are one of the largest of the textile mills in Reutlingen, and are mentioned as an example of a large number of similar undertakings in this town.

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R H E I N E (Westphalia)

52° 17' N. 7° 27' E: 330 miles: (35,000)

Rheine is situated to the extreme North of Westphalia, on the river Ems. It is an important centre for both rail and water transport. The Dortmund-Ems canal passes 3 miles North-east of the town and the Mittelland canal joins the Dortmund-Ems canal 8 miles to the East of the town at Bevergern. Two main railway lines cross at Rheine; the line from Hamm and the Ruhr Northwards to Emden and the line from Holland in the West to Osnabrück, Hanover and central Germany in the East.

In/

RHEINE (Westphalia) contd.

In peace time, Rheine was a centre for the textile industry. To-day, although there are no industries of individual importance, there are firms engaged in metal manufacture, some spinning and weaving of textiles, and a certain amount of repairs to rolling-stock is undertaken.

The population of Rheine has doubled itself since 1925. This is probably due to its excellent transport facilities together with its peace time industrial development.

Transportation

Marshalling Yards Rheine (3)

The Rheine marshalling yards are capable of handling 2,000 wagons per 24 hours.

Railway Repair Shops Rheine (3)

There are medium sized repair shops undertaking mainly the repair of goods wagons.

Engineering and Armaments

Windhoff Hovestr. (3)

The Rheiner Maschinenfabrik Windhoff A.G. formerly manufactured various types of railway equipment including turntables and shunting locomotives. Underground Diesel locomotives are also produced. It is reported that they are now producing locomotives and components for the Henschel factory at Kassel and that their works have been considerably enlarged.

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RHEINFELDEN (Baden)

47° 35' N. 7° 50' E: 44.5 miles: (7,000)

Rheinfelden is on the upper Rhine and close to the Swiss frontier 6 miles East of Basle. The activities are concerned chiefly with the large aluminium works and the chemical factory.

Public Utilities

Electric Power Station Rheinfelden (2)

This is the oldest of the power stations of the Upper Rhine Hydro Scheme (see under Waldshut) which consists of 8 existing and 5 projected hydro-electric power stations on the river Rhine, jointly developed by Germany and Switzerland. It has an estimated installed capacity of 65 MW. A weir stands across the Rhine, two miles below the Ryburg Schwörstadt power station, and the Rheinfelden station is situated 1,000 yards below the weir, approximately 10 miles East and

upstream/

RHEINFELDEN (Baden) contd.

upstream from Basle. The station was in process of reconstruction and development at the outbreak of war. There is a large substation which contains at least fifteen 50 kV and ten 60 kV switches.

Local supply is given to the Rheinfelden works of the Aluminium Industrie A.G. and to the I.G. Farben works.

One 110 kV line connects to Ryburg-Schwörstadt and there is a projected 110 kV line to Eichstetten. A connection at lower voltage passes to Augst-Wyhlen.

Non-Ferrous Metal Manufacture & Fabrication

A. I. A. G.

Rheinfelden (2)

The works of the Aluminium Industrie A.G. occupy a large area along the northern bank of the Rhine which here forms the frontier between Germany and Switzerland. They have been considerably extended during the war and are now estimated to have a capacity of 30,000 tons of aluminium. Some 3,000 workers are employed, including a proportion of foreign labour. Power is taken from the Rheinfelden power station (see under Public Utilities).

Chemicals and Explosives

I. G. Farben

Rheinfelden (3)

These chemical works, which are adjacent to the aluminium plant mentioned above, have a capacity of 25,000 tons of caustic soda and 22,200 tons of chlorine per annum. This plant has an estimated annual capacity of 5,000 tons of synthetic rubber. The acetylene process is used.

/ Rheydt

R H E Y D T (Rhineland)

51° 10' N. 6° 30' E: 285 miles: (80,000)

Rheydt is to the South of München-Gladbach, which town it almost adjoins. It is the railway junction of importance to the Lower Rhineland, and there are large marshalling yards.

The most important single undertaking in Rheydt is the Kabelwerke Rheydt A.G. and there are several other engineering works and makers of textile machinery. In peacetime Rheydt is, together with München-Gladbach, an important textile centre and has a large number of spinning and weaving mills making cotton, woollen and silk products, but it is believed that a large part of this trade was transferred early in the war to the textile districts of Saxony and Eastern Germany.

Transportation

Railway Junction Rheydt (3)

Two important railway lines, coming from Aachen to the South-west and from Köln to the South-east respectively, meet in Rheydt before entering München-Gladbach (2 miles to the North) where they connect with the main route from the Ruhr to Venlo and Holland.

Marshalling Yards Rheydt (3)

The Rheydt marshalling yards are capable of handling 2,500 wagons per 24 hours.

Public Utility Services

Gasworks Rheydt (3)

In 1936 the municipal gasworks made 250 million cu. ft. of gas.

Engineering and Armaments

Kabelwerk Bonnenbroicherstr.(2)

The Kabelwerk Rheydt A.G. are large cable works equipped for the manufacture of all kinds of cables, including insulated cables for high- and low-tension. Some 3,500 workers are believed to be employed. This company, which acquired the bulk of the shares of the Deutsche Kabelwerke A.G., controls, in addition to the parent factory in Rheydt, large works in Berlin-Lichtenberg (where they adjoin the Ariadne works) and in Ketschendorf near Fürstenwalde. They are among the leading suppliers of cables in Germany.

Schorch Werke A.G. Ludwig Knickmann Str.(3)

The Schorch Werke A.G. are makers of electric generators, motors, and transformers, including those of the largest size. They employed some 1,500 workers before the war.

/Froriep

RHEYDT (contd.)
 Froriep G.m.b.H. Egerstr. (3)

The Maschinenfabrik Froriep G.m.b.H. are makers of lathes, boring and planing machines, and other machine tools.

Scheidt & Bachmann Rheydt (3)

The Scheidt & Bachmann A.G. are makers of railway signalling apparatus and point installations. The products also include oil tank installations. Approximately 1,000 workers were employed before the war.

RIESA (Saxony)

51° 20' N. 13° 20' E: 580 miles: (27,000)

Riesa is 28 miles North-west of Dresden and on the left bank of the Elbe. The main line from Leipzig to Dresden here crosses the Elbe. Riesa is a transshipment centre of some importance to the waterborne traffic on the Elbe. The steelworks form the chief industry of the town. There are a number of flour mills, but the remaining industries, which include a vegetable-oil crushing plant, are on a small scale.

Engineering and Armaments

Stahlwerke Riesa (2)

Stahlwerke Gröditz (3)

The Mitteldeutsche Stahlwerke A.G., parent works of which are at Riesa, is a large concern which employed in total some 15,000 workers before the war. In addition to the two works at Riesa and Gröditz, they have brown-coal mines, a large electric power station, and an iron foundry at Lauchhammer, which is dealt with separately under the heading Senftenberg. The Riesa works have seven Siemens-Martin furnaces (with capacity for 60,000 tons per annum), stamping, pressing and rolling mills, and steel tube-making plant. Among other products they make catalyst ovens and other equipment for synthetic-oil plants. The Gröditz works are 10 miles North-east of Riesa on a branch railway to Elsterwerda. This plant includes four Siemens Martin furnaces, rolling and stamping mills, and an iron and steel foundry. The products include steel plates for shipbuilding, and railway-wagon components and wheels.

Food Stuffs

A. Hübner & Co. A.G. Riesa (-)

Gebr. Schönherr Riesa (-)

The above are the two largest of seven flour mills in Riesa. Each of these two mills has a capacity for 150 tons daily and large grain-storage facilities.

-----oOo----- /Ronneburg

RONNEBURG (Thuringia)

50° 50' N. 12° 5' E: 535 miles: (8,000)

Ronneburg is 5 miles East of Gera on a branch railway leading from Gera to Meerane. There are curative springs in this neighbourhood and Ronneburg is a small health resort. Apart from an engineering works, the industry includes a number of small textile mills.

Engineering and Armaments

Max Hering

Ronneburg (2)

The Auto-Räder & Felgenfabrik Max Hering A.G. employed approximately 1,000 workers before the war and are important makers of motor-car wheels of both the wire and disc types. In peacetime they were the chief suppliers of wheels to Opels. Their works, which include iron and steel foundries, were enlarged in 1936.

/ROSENHEIM

ROSENHEIM (Bavaria)

47° 50' N. 12° 10' E: 600 miles: (20,500)

Rosenheim is at the foot of the Bavarian Alps, 35 miles South-east of Munich and on the River Inn. Since the earliest times it has been a trading centre of note owing to its position on one of the historic routes from Italy via the Brenner Pass and the Inn valley into Central Europe. It is now a railway junction of great importance. The industries of Rosenheim are normally on a small scale, but the rubber boat and clothing factory of Klepper G.m.b.H. has assumed new importance since the war. There are large brine deposits in this region which are an important source of the German salt supply.

Transportation

Railway Junction Rosenheim (2)

Rosenheim is on the main line from Munich via the Inn valley to Innsbruck and the Brenner Pass. A second line diverges at Rosenheim and leads to Salzburg and Vienna. Both of these are highly important trunk routes. A further branch line connects Rosenheim with Munich by a route to the South of the main track, and a branch line also leads Northwards down the Inn valley to connect with the Munich-Braunau route to Austria.

Chemicals and Explosives

Bayerische A.G. Heufeld (3)

At Kirchdorf-Heufeld 7 miles West of Rosenheim on a branch line leading to Holzkirchen, the Bayerische A.G. für chemische & landwirtschaftlich-chemische Fabrikate have a chemical works making chiefly sulphuric acid, for which they have an annual capacity of 27,000 tons.

Rubber and Tyres

Klepper Werke Rosenheim (2)

The Klepper Werke G.m.b.H. are important producers of rubber boats and early in 1942 obtained 33% of a large batch of Government orders. The range of products includes boats for troop transports (including types which can be fitted with outboard motors), and boats specially designed for work in heavy surf. They were believed to be employing about 4,000 workers in 1943. Klepper also makes oilskins and waterproof clothing generally and undoubtedly has its own plant for rubber proofing. They are also believed to be the chief supplier of waterproof (rubber) clothing for the German armed forces.

Textiles/

ROSENHEIM (Bavaria) (Contd)

Textiles, Rayon, Pulp and Paper

Zellstoffwerke

Redenfelden

(-)

The Aschaffener Zellstoffwerke A.G. have a large mill at Redenfelden on the River Inn 2 miles South of Rosenheim. Cellulose for paper making is the chief product and the plant also includes a mill where finished paper is manufactured.

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ROSSWEIN (Saxony)

51° 5' N. 13° 10' E: 575 miles: (10,000)

Rosswain which is 25 miles west of Dresden, is an industrial town on the Freiburger Mulde, a tributary of the River Mulde. It is on a branch railway which leads from Meissen and joins the Riesa-Chemnitz line at Döbeln, 5 miles North-west of Rosswain. The town's industries include textiles, carpet making and several small-scale engineering works as well as a ferro-alloy plant which produces tungsten powder.

Iron and Steel

Th. Kniesche

Rosswain

(3)

The firm of Th. Kniesche has a ferro-alloy plant which has an estimated annual capacity of 180 tons of tungsten powder.

Engineering and Armaments

Carl Bauch

Rosswain

(3)

The Rosswainer Metallwarenfabrik Carl Bauch manufactures armatures and couplings for gas and water pipe systems and printing machinery. Before the war some 700 workers were employed.

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ROSTOCK (Mecklenburg)

54° 5' N. 12° 10' E: 545 miles: (122,000)

Rostock is near the mouth of the River Warnow, which from this point flows through a wide channel to enter the Baltic 6 miles to the North at Warnemünde. It is one of the larger German Baltic ports and a considerable trade with Denmark and Sweden is handled in the harbour of Rostock itself and in Warnemünde, which serves as an advanced port. The Neptun shipbuilding concern is an important builder of submarines, and these yards, together with the principal works of the Heinkel concern, make Rostock a production centre of the highest value at the present time. These two undertakings form the main part of Rostock's industry. Their output has been considerably reduced by bombing attacks and by the transfer of a large part of the Heinkel activities to Oranienburg.

The/

The town is on the left bank of the Warnow. The central area is closely built and largely composed of buildings dating back to the days of the Hanseatic League. This part of the town was heavily damaged by bombing in 1942.

The shipbuilding yards are on the Western outskirts of the town, and three of the Heinkel plants are situated in the same area along the railway from Rostock to Warnemünde, which follows the River Warnow approximately half a mile from the left bank. A fourth Heinkel plant is at the Eastern end of the town near to the goods station and the gasworks. The other industries, which include chemical plants and a number of minor engineering works, are in the Southern and Western quarters of the town area. Rostock is the largest town in Mecklenburg and is the seat of a University.

Transportation

Port Area Rostock (3)

In peacetime Rostock's trade is mainly with Denmark and Sweden, and an important railway link with Copenhagen is the train ferry which runs from Warnemünde to Gjedden in Denmark. The larger of the two chief docks of the port is at Warnemünde 6 miles to the North of Rostock where the River Warnow, after widening into a large lagoon (Der Breitling), is connected with the Baltic by a narrow channel through the tongue of land on which Warnemünde is built.

Railway Junction Rostock (3)

The main line connecting Rostock with Berlin and Hamburg passes through the principal railway station on the Southern outskirts of the town and runs close to the left bank of the Warnow to Warnemünde. A second line diverges close to the main station and leads in an Easterly direction to Stralsund.

Railway Repair Shops Rostock (3)

These repair shops, which undertake mainly the repair of goods wagons, are immediately South-east of the main railway station. The goods and marshalling yards serving the quays and dock area are to the South of the repair shops.

Public Utility

Power Station Rostock (3)

The thermal power station has an installed capacity of 27 MW. It is connected by 30 kV and 80 kV lines to the substation at Güstrow which links up with the 100/150 kV long-distance double-circuit line to Finow.

Gasworks Bleicherstr. 26. (3)

In 1936, the municipal gas works made 382 million cubic feet of gas.

Aircraft/

ROSTOCK (Mecklenburg) (Contd)

Aircraft

Heinkel

Marienehe

(1)

The Ernst Heinkel Flugzeugwerke are the parent works of the company and have four separate branches in the Rostock area, of which the largest is the assembly plant at Marienehe established about 1935, 3 miles to the North of Rostock on the road to Warnemünde. This assembly plant employs at least 8,000 workers, including a large proportion of foreign workers. Marienehe was the research and development centre and has been responsible for the design of a long series of Heinkel types (bombers, seaplanes, transport types, etc.). The main type produced is the He.111 twin-engined bomber which has been in production in successive versions since 1935. The He.177 heavy bomber has been built in small numbers since 1941, but large-scale assembly has been transferred elsewhere (Oranienburg and Arado, Brandenburg). Marienehe still produces the twin - He.111 five - engined glider-towing aircraft.

The works are on a large scale with five assembly halls and over 20 separate machine shops. They have been continually expanded during the past few years. Large-scale production of Heinkel types was also from 1937 undertaken at the Oranienburg subsidiary (He.111's) near Berlin and in 1942-43 at the Schwechat plant near Vienna (He.219 twin-engined dive-bomber and recently He.280 jet-propelled fighter). As a result of the April 1942 raid on Rostock the research sections, together with their equipment and the wind tunnel, were moved to Schwechat.

Heinkel

Bleicherstr.

(2)

The Bleicherstrasse works, which are in the South-eastern quarter of the city of Rostock employ some 9,000 workers and make aircraft metal components mainly stamped and pressed parts, including supports, frames and seats, both for the Marienehe plant and for the Heinkel assembly works in Oranienburg (near Berlin) and Vienna.

Heinkel

Werftstr.

(2)

The Werftstrasse works, which are in the Western quarter of the city between the Neptun shipbuilding yards and the railway line, employ 2,000 workers and construct fuselages and wing components. This branch specializes in woodworking.

Heinkel/

ROSTOCK (Mecklenburg) (Contd)

Heinkel Horst Wessel Str. (3)

These works are engaged on the construction and fitting of the lighter parts of aircraft and on work in conjunction with the main assembly plant at Marienshe, one mile to the Northwards. The Horst Wessel Strasse works, which are the smallest of the four Rostock Heinkel plants, are on the Western side of the railway near to the Werftstrasse factory.

Bachmann Ribnitz (3)

The Bachmann Flugzeug K.G. have a repair works at the airfield which is chiefly engaged on the overhaul of aircraft of Heinkel design (bombers and reconnaissance types).

Pütznitz - a further Heinkel branch in the neighbourhood, formerly producing cockpit, nose and other fuselage components. Now reported that this work has been transferred from Pütznitz to a new works at Barth.

Shipbuilding

Neptunwerft Werftstr. (2)

The Neptunwerft Rostock Schiffswerft und Maschinenfabrik G.m.b.H. is an important shipyard, who at one time built only merchant ships but since 1938 have been increasingly turned over to warship construction. In the present war they have completed a number of 500-ton submarines, escort vessels, and 600-ton mine sweepers. In September 1943 the maximum figure of 9 U-boats were under construction. These yards can also build merchant vessels up to 7,500 tons and in 1943 commenced work on orders for 3000-ton merchant ships under the German "Hansa" programme.

The four building slips vary between 250 and 600 ft. in length and two floating docks of 310 and 400 ft. length are also attached to the yard.

In 1941 some 2,000 workers were reported to be employed, including a high proportion of foreign labourers, the majority of whom were French. The Neptunwerft was undertaking ship repairs on a large scale, this side of the yard's activities having been greatly developed. They have important machine shops and produce their own marine steam engines, boilers and superheaters.

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ROTTWEIL/

ROTTWEIL (Württemberg)

48° 10' N. 8° 35' E: 450 miles: (12,000)

Rottweil is 10 miles North-east of Schweningen and on the main line from Stuttgart to Schaffhausen and Zurich. Apart from an explosives factory the industries, which include clock and watch making and textiles, are not on a large scale.

Chemicals and Explosives

KBln-Rottweil A.G. Rottweil (3)

This factory is operated by the KBln-Rottweil A.G., who are controlled by I.G. Farbenindustrie. This plant operated in the last war, producing about 750 tons of nitrocellulose per month. It continued operations under the terms of the Versailles Treaty, making a small quantity of propellant powder for sporting ammunition, and a considerable quantity of nitrocellulose for artificial fibre production.

Ground reports suggest that the production of nitrocellulose is now somewhat larger than in the last war, and that some high explosive, believed to be T.N.T. was also made. Air photographs confirm the existence of considerable nitrocellulose capacity, but there is no evidence of a T.N.T. unit. These photographs suggest that the nitrocellulose capacity probably lies between 8,000 and 10,000 tons per annum.

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RUDOLSTADT (Thuringia)

50° 40' N. 11° 20' E: 500 miles: (18,000)

Rudolstadt is in the valley of the Saale 10 miles North of Saalfeld and on the railway from North to South Germany via Jena and Bamberg. The manufacture of porcelain is the main peacetime industry, but there are also factories making Röntgen tubing and other therapeutic and chemical apparatus, vacuum flasks, and appliances for food storage. Near Schwarza, 2 miles to the South-west, where there is an important rayon plant, is an airfield which forms a station on the peacetime air-traffic routes.

Engineering and Armaments

Siemens-Reiniger Rudolstadt (3)

The Siemens-Reiniger Werke A.G., a subsidiary of Siemens & Halske, are makers of X-Ray and all kinds of therapeutic electrical apparatus. They have a second factory at Erlangen in Bavaria. The Rudolstadt factory, formerly the Phönix Röntgenröhrenfabriken A.G., specialises in vacuum tubes for X-Ray apparatus, and also makes glass laboratory equipment.

Isola Rudolstadt (-)

The Isola Ges. für Wärme & Kälte Isolierung are makers of vacuum flasks and insulated food-storage equipment.

Textiles/

RUDOLSTADT (Thuringia) (Contd)

Textiles, Rayon, Pulp and Paper

Zellwolle

Schwarza

(3)

The Thüringische Zellwolle A.G. is one of the large rayon-producing factories, the erection of which was begun in 1935 as part of the Four Year Plan. Production began in 1936 and at the outbreak of war the Schwarza factory was one of the largest rayon-producing units operating in Germany. The production capacity was 100 tons per day. In 1938 some 1,200 workers were employed. Schwarza is 2 miles South-west of Rudolstadt.

-----oO-----

RUHLA (Thuringia)

50° 55' N. 10° 25' E: 455 miles: (9,000)

Ruhla is in the Thuringia Wald 6 miles South East of Eisenach and at the terminus of a small branch line which connects with the main Berlin-Frankfurt line at Wurtha, 3 miles to the North. It is a small tourist resort for visitors to the Thuringian mountains, but has also a considerable watch and clock making industry and a number of factories making small metal goods and fittings. The largest of these firms, which is described below, has now been developed into an important supplier of A.A. ammunition fuses.

Engineering and Armaments

Gebr.Thiel

Ruhla

(2)

The Gebr.Thiel G.m.b.H. incorporating the Thiel and Schuchardt A.G. are manufacturers of watches and clocks, and also of sawing and planing machinery. A section of the works is devoted to the making of precision tools required for the watch making industry. Thiel are the leading German time fuze producers, their mechanical time fuze being the normal design employed in German A.A. and other shells. They have branches in the neighbouring towns of Seebach and Mühlhausen and probably sub-contract a large proportion of the work on small parts for the clockwork movements to local firms. There are a number of smaller watch making firms in Ruhla which are also believed to be engaged on this work.

-----oO-----

RUHLAND-SCHWARZHEIDE (SAXONY)

(see under Senftenberg)

-----oO-----

RUHR/

RUHR (RHINELAND AND WESTPHALIA)

General

The valley of the river Ruhr lies between those of the rivers Wupper and Lippe, and it extends through the provinces of Rhineland and Westphalia.

The industrial targets in the area are concentrated in a narrow strip of territory which extends East from the river Rhine and is about 30 miles long and 10 miles wide; and which lies approximately between the river Ruhr and the Rhein-Herne canal. The Ruhr and the adjacent areas in Rhineland and Westphalia contain a concentration of industry which is without parallel in Europe. An almost unbroken chain of great industrial cities runs from Duisburg in the West through Oberhausen, Mülheim, Essen, Glesenkirchen, and Bochum to Dortmund in the East.

Notwithstanding the policy of industrial dispersal and the heavy air attacks, there has been no appreciable movement of heavy industry away from the Ruhr to safer areas and, although strenuous efforts have been made to develop new heavy industrial plants elsewhere, the Ruhr area retains nearly all of its pre-war importance as the principal centre of heavy industry in Germany.

Division into districts

For the purpose of this report the Ruhr has been divided into 14 districts, under which headings they should be sought in the text. These conform roughly with the district boundaries as marked on the G.S.G.S. (4081 series) maps of Germany; a map showing these boundaries is included in volume one. West to East these districts are:-

Duisburg
Oberhausen
Mülheim
Bottrop
Gladbeck
Essen
Gelsenkirchen
Wanne-Eickel
Wattenscheid
Herne
Bochum
Castrop-Rauxel
Witten
Dortmund.

Localities bordering on the Ruhr area are described under their own heading with the following exceptions:-

Herten and Oer-Erkenschwick are described under the heading "Recklinghausen"; Hüls under "Marl"; Haspe, Gevelsberg and Schwelm are under "Hagen"; Barmen and Elberfeld under "Wuppertal"; and Hohenlimburg under "Letmarthe".

-----oO-----

/RUMMENOHL

RUMMENOHL

51° 15' N. 7° 30' E: 325 miles: (600)

Rummenohl is 7 miles South of Hagen on a branch railway line which follows the valley of the River Volme, a tributary of the Ruhr, to Brügge in the hilly district of the Sauerland. Rummenohl is of no importance apart from its explosives works.

Chemicals and Explosives

Dynamit A.G.

Rummenohl

(3)

This factory made considerable quantities of cordite propellant in the last war, at which time it also apparently manufactured some nitrocellulose. There is no evidence of activity here in the peace years, but it is reported that work began again in 1943. It is not clear whether explosives manufacture or filling is undertaken at the present time, but one reference to the filling of incendiary bombs here makes it improbable (if this information is correct) that explosives manufacture would be undertaken on the same site.

-----oO-----

RÜSSELSHEIM (Hesse)

50° N. 8° 20' E: 385 miles: (14,000)

Rüsselsheim is on the River Main 10 miles East of Mainz. It is the site of the chief works of the Opel concern. These works, which in peacetime were among the largest motorcar manufacturers in Europe, have been greatly expanded during the war, and the pre-war population of Rüsselsheim, which is given above, will now have been much increased. The Opel works are now largely engaged on aircraft component as well as motor transport manufacture and the number of workers have been reported as high as 40,000. The town of Rüsselsheim is entirely concerned with the Opel works, and there are no other industries of importance.

Aircraft and Aero Engines

Adam Opel A.G.

Rüsselsheim

(2)

Certain departments of the Opel car works were in 1939-40 turned over or expanded for aircraft components manufacture and the present note relates only to that side of their work.

The heavy press capacity at Rüsselsheim is partly devoted to the fabrication of Ju.88 bomber components for supply to the assembly plants at Bernburg and elsewhere. These components include the frameworks for cockpit covers, for transparent nose units and for gun turret covers. In addition aero-engine bearers, cowlings and nacelles are made, together with undercarriages and tail wheels, all for the same type of aircraft.

In/

RUSSELSHEIM (Hesse) (Contd)

Adam Opel A.G. (Contd)

In a special department airscrew reduction gears for fitting to Daimler-Benz aero-engines are made and supplied to the D.B. aero-engine factories. The Rüsselsheim works is also believed to be an important producer of tools, jigs and dies required in other aircraft factories in Germany.

Only a proportion (possibly 3,000) of the total employed at Rüsselsheim are concerned with the above aircraft components work.

Engineering and Armaments

Adam Opel A.G.

Rüsselsheim

(1)

These works, occupying a large site West and South West of Rüsselsheim, with a quay frontage on the South bank of the Main, at one time produced the Opel range of cars and lorries. They were owned by General Motors. Their pre-war output was up to 120,000 units annually, the works having a productive capacity at the rate of 200,000 units per annum. In 1935, lorry production was transferred to a new plant at Brandenburg, many of the components continuing to be made at Rüsselsheim, however. At the outbreak of war car production was stopped and a portion of the plant was converted to the manufacture of air-frame components for Junkers 88 aircraft. Aircraft propellor reduction gearing for Daimler-Benz aircraft engines was also manufactured. In addition, large quantities of vehicle spare parts continued to be made, Rüsselsheim being responsible for maintaining the Opel service and repairs organisation, whilst parts were sent to the lorry producing plant at Brandenburg. It was reported early in 1943 that Rüsselsheim was to concentrate upon lorry production, and several reports concerning the manufacture of lorries at this plant have been received. On the other hand, several references to the manufacture of aircraft engines have been received in 1943. In addition, reference has been made to the manufacture of armoured cars, tracked motor cycles, and amphibious vehicles.

The number of workers has been variously reported and the whole Rüsselsheim complex would appear to employ 20,000 to 25,000 workers including a large number of foreigners.

SAALFELD (Thuringia)

50° 40' N. 11° 20' E: 500 miles: (20,000)

Saalfeld is on the left bank of the River Saale and on one of the main North to South railway routes through the Thuringian hills. A paper mill and a number of small iron foundries and engineering works constitute the main industries of Saalfeld itself. Large iron and steel works are situated 3 miles East of the town and it is also the headquarters of an important hydro-electric scheme in the valley of the Saale.

Transportation

Railway Junction Saalfeld (3)

The railway line from Halle, which follows the valley of the Saale to Saalfeld and leads thence southwards through the Thüringer Wald to Bamberg and Nürnberg, forms one of the chief North to South railway routes. This line is joined at Saalfeld by a branch line from Gera, and a subsidiary branch line connects Saalfeld with Arnstadt to the North West.

Public Utility Services

Hydro Scheme Saale (2)

With the primary object of improving the navigation of the river Elbe in dry periods and of preventing flood damage, two large dams have been erected at Bleiloch and Hohenwarte to control the inflow of the Saale, a tributary of the Elbe. These dams and their reservoirs, which impound a water volume almost equal to the annual flow of the Saale, are among the largest in Germany. The water power thus created is used to serve an important hydro scheme. The four generating stations described below are now fully developed, and it is probable that plans exist for further constructions which will greatly increase the output. Near Saalburg, 20 miles South-east of Saalfeld, is the Bleiloch dam and reservoir and its adjacent Burgkammer compensating reservoir. The generating stations of these two have capacities of 40 MW and 5 MW respectively. A pump-storage station operates between the two reservoirs. Four miles South-east of Saalfeld, near the village of Kaulsdorf, is the Hohenwarte dam and reservoir and its adjacent Eichicht compensating reservoir. The generating stations of these two have capacities of 50 MW and 5 MW respectively. A pump-storage station operates between the two reservoirs.

It/

SAALFELD (Thuringia) (Contd)

It is planned to construct a further pump-storage station of 368 MW capacity using the Eichicht compensating reservoir as a lower reservoir and a high level reservoir in the hills on the left bank of the River Saale.

An indoor substation, owned by the Thüringenwerke A.G., Weimar, is situated 270 feet above the Bleiloch generating station, and contains two 10/50/100 kV transformers of 20 MW. capacity.

100 kV lines go to Herlasgrün and Hof.

A 50 kV double-circuit line goes to Jena.

Local supplies are given at 10 kV and the stations of the group are interconnected at this voltage.

The planned 220 kV long-distance line linking the power stations of the Alps with central and eastern industrial Germany will pass through Bleiloch via Gebersdorf.

Iron and Steel and Ferro Alloys

Maximilianhütte

Unterwellenborn (3)

The Eisenwerk Gesellschaft Maximilianhütte, which is owned by the Flick group, has a large iron and steel works situated between the villages of Unterwellenborn and Rößlitz 3 miles to the East of Saalfeld. This works comprises blast furnaces and steel rolling mills. The capacity is estimated to be 250,000 tons of pig iron and 250,000 tons of crude steel per annum. Some 3,000 workers are believed to be employed. This works utilise the ore from the mines near the village of Gross Kamsdorf, 2 miles South of Unterwellenborn.

Engineering and Armaments

Adolf Knoch

Saalfeld

(-)

The Nähmaschinenfabrik Adolf Knoch A.G. were manufacturers of sewing machines, and employed some 300 workers before the war.

Reissmann

Kaiserstr.

(-)

The August Reissmann Maschinenfabrik K.G. were makers of machinery for the ceramic industry. Some 300 workers were employed before the war.

Paul/

SAALFELD (Thuringia) (Contd)

Paul Auerbach	Saalfeld	} (-)
Franz Irmischer	Saalfeld	

These are two of several small iron foundries and engineering works in Saalfeld.

Food Stuffs

Mauxion	Saalfeld	(-)
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In peacetime the Schokoladenfabrik Mauxion m.b.H. is one of the four largest chocolate and sweet manufacturing concerns in Germany.

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SAARBRÜCKEN (Saar)

49° 15' N. 7° E: 350 miles: (130,000)

Saarbrücken is the largest town in the Saar territory and a most important industrial and coal-mining centre. It is near the southern boundary of the Saar area and is on a main railway line which follows the valley of the River Saar to Trier. Saarbrücken is a railway junction for several branch lines serving the industrial regions of the Saar and of Lorraine.

The coalfields of the Saar Basin, which extend mainly to the North of the town, are among the largest in Europe and, together with the rich iron-ore deposits of Lorraine, they yield raw material for the highly-developed iron and steel industry in these regions. Several iron and steel works are established in Saarbrücken itself. The industries include a number of engineering works which, though individually on a small scale, constitute in the aggregate a valuable factor in the German war production. The industrial area extends along the valley of the River Saar from the outskirts of Völlingen (5 miles to the West) to Brebach and Neuschmidt, 3 miles to the East of Saarbrücken. The river Saar is navigable and is an important means of transport for the products of this region.

Transportation

Inland Harbour	Saarbrücken	(3)
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This small inland harbour is in the centre of the town and consists of one large crescent-shaped dock on the right bank of the river Saar. Between this dock and the river is an area known as the Kohlenbahnhof with railway sidings and loading facilities for coal etc. In 1938 inward traffic amounted to 159,000 tons and outward traffic to 333,000 tons.

Railway/

SAARBRÜCKEN (Saar) (Contd)

Grube Sulzbach Sulzbach (3)

The Sulzbach coal mine had five hauling shafts and in 1937 produced 1,500,000 tons of coal with 5,600 workers. Sulzbach is 9 miles to the North-east of Saarbrücken.

Grube Camphausen Fischbach (3)

The Camphausen coal mine has five hauling shafts and in 1937 employed some 4,500 workers. Fischbach is 8 miles to the North of Saarbrücken.

Grube Geislautern Luisenthal (3)

The Geislautern coal mine has three hauling shafts and in 1937 2,400 workers were employed.

Grube Gottelborn Furstenhausen (3)

The Gottelborn coal mine has two hauling shafts and in 1937 employed some 2,500 workers. Fursthausen is 4 miles West of Saarbrücken.

Halberger Hutte Hrebach (3)

The Halbergertutte G.m.b.H. coking plant has 35 ovens with an annual rated dry coal capacity of 230,000 tons. (See also under Iron & Steel)

Burbach-Eich-Dudelingen coking plant Saarbrücken (2)

Owned by the Vereinigte Huttenwerke Burbach-Eich-Dudelingen A.G., and situated within the company's iron and steel works, this coking plant is believed to have 195 ovens in operation with an estimated annual dry coal capacity of 747,000 tons. The plant has a total of 8 batteries comprising 384 ovens, some of which are believed to be unactive. In July 1942, aerial cover revealed that during the reconstruction of one of the newer batteries of 60 Koppers ovens, some of the old waste-heat ovens were in operation. It is not known whether these latter are still in operation or not.

Iron/.

SAARBRÜCKEN (Saar) (Contd)

Iron and Steel

Ver.Hüttenwerke

Saarbrücken (1)

The iron and steel works of the Ver. Hüttenwerke Burbach-Lich-Dudelingen A.G. is the largest works of this kind in Saarbrücken. It has 8 blast furnaces, five 22-ton Thomas converters and 3 open-hearth furnaces. The capacity is estimated at 700,000 tons of steel per annum. The coking plant adjacent to these works is described above under Solid Fuels. Products include light armour-plate for tanks, steel structures, forgings, bars, sheets, and wires. The works occupies a large area in the Western quarter of the town on the right bank of the river Saar.

Halberger Hütte

Brebach (2)

The iron works of the Halberger Hütte G.m.b.H. is in the suburb of Brebach to the East of Saarbrücken. It has 6 blast furnaces and an estimated capacity of 450,000 tons of pig-iron per annum. The coking plant adjacent to these works is described above under Solid Fuels. These works produce iron castings, including gas, water, and drainage pipes.

Engineering and Armaments

Dingler Karcher & Cie

Neuscheidt (2)

The Saarländisches Stahlwerk Dingler Karcher & Cie., G.m.b.H. are steel founders and makers of railway equipment, wagon and locomotive wheels and components, gears, joists and all varieties of cast-steel products. They were reported in 1943 to be employing some 6,000 workers. Their factory is in the outlying suburb of Neuscheidt, East of Saarbrücken.

Brown Boveri & Cie A.G.

Im Helmerswald- (3)
St.Johann

The Saar Werk Brown Boveri & Cie. A.G., a branch factory of the Mannheim firm, is a well-equipped plant which specialises in electric motors and brakes, and is believed to employ some 700 workers. The works is in the suburb of St.Johann on the eastern side of the town.

Maschinenbau/

SAARBRÜCKEN (Saar) (Contd)

Maschinenbau A.G.

Lebacherstr. (3)

The Maschinenbau A.G. vorm. Ehrhardt & Sehmer are iron founders and makers of steam engines, small Diesel motors, compressors, pumps, and blast-furnace equipment. They employed some 1,500 workers in 1939. Their works are in the North-western quarter of the town.

Lüttgens

Brüderstr. (3)

The works of the Lüttgens Waggonfabrik G.m.b.H. are in the Western suburb of Burbach adjacent to the Ver. Hüttenwerke. They are makers of railway wagons and wagon components.

Ernst Heckel

Graf Johann Str. (3)

The Gesellschaft für Förderanlagen Ernst Heckel m.b.H. are makers of conveyors and transporters, including overhead cable railways. Their works, which cover a large area, are believed to employ over 1,000 workers.

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SAARLAUTERN (Saar)

49° 20' N. 6° 45' E: 340 miles: (33,000)

Saarlautern (or Saarlouis) is on the river Saar to the North-west of and 15 miles downstream from Saarbrücken. It is less industrialised than other Saar towns of equal size but is the seat of a large part of the administration of the province. There are several small engineering works and metalware manufacturers, but none of outstanding importance. The coal mine mentioned below is the most westerly of the group of mines, the majority of which have been included under the heading "Saarbrücken".

Solid Fuels

Grube Enseldorf-Viktoria

Enseldorf (3)

The Enseldorf coal mine, which together with the other mines in the Saar territory belongs to the German Government but is operated by the Saargruben A.G., is situated two miles to the East of Saarlautern. It has four hauling shafts and employed some 6,000 workers in 1937. Annual coal production is believed to be in excess of 1 million tons.

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SAGAN/

SAGAN (Silesia)

51° 40' N. 15° 10' E: 665 miles: (20,000)

Sagan is in Lower Silesia close to the border between the Provinces of Brandenburg and Silesia. It is the junction for two main lines leading from northern Germany to Breslau and Upper Silesia. Industry consists mainly of textiles and paper-making, which in peacetime is not on a large scale; there have been reports however, of the establishment in Sagan of a new aircraft factory.

Transportation

Railway Junction Sagan (3)

Two main railway lines, coming from Cottbus to the West, and from Frankfurt/Oder to the North-west, meet in Sagan and lead thence to Breslau and Upper Silesia.

Railway Repair Shops Sagan (3)

These are medium-sized repair shops which undertake mainly the repair of goods wagons.

Aircraft and Aero Engines

Focke Wulf Sagan (-)

A number of reports received during 1943 suggest that one of the components departments of the Focke-Wulf concern which formerly had its parent works at Bremen has been transferred to Sagan.

Reconnaissance photographs show two possible factories in the Sagan area but it is not possible to ascertain their activities.

-----oO-----

SALZGITTER/

SALZGITTER (Hanover)

52° 05' N. 10° 32' E: 450 miles: (4,200)

The great iron ore deposits of Salzgitter just north of Goslar in the Harz region and S.S.W. of Brunswick have been worked on a small scale for many years, and, following the loss of Lorraine in 1919, their large scale operation was discussed by German geologists and metallurgists. According to a report published in 1934 by the Prussian Geological Institute (Die Eisenerzvorräte des Deutschen Reiches) the size of the deposits of ore that could be worked as an economic proposition was 35 million tons while there was a further 65 million tons of ore that would require more favourable business conditions such as cheap freight and higher steel prices before it could be considered.

These two categories of ore were at a depth of a few feet to nearly 1,000 feet below the surface, but going to a depth of 3,500 feet at least 400 million tons of ore were available. It has since been stated that the estimate of volume of ore was much too low. Features common to all the Salzgitter ores are their high phosphorus content, which makes them suitable for the basic Bessemer process, and their high silica content, which, until the discovery by Brassert of the means of using acid burdens in blast furnaces, rendered them unsuitable for smelting without the mixture of other ores. The greater part of the Salzgitter ores have an extremely low iron content but among the best grades are some with an iron content of about 40 per cent. Before the introduction of the Brassert process and the erection of the Reichswerke Hermann Göring, the best Salzgitter ores were mined to the extent of a few hundred thousand tons per annum by the nearby Ilseder Hütte of Peine, which mixed them with the limey Peine ores, and by certain Ruhr works which mixed them with imported ores.

Following the successful introduction in the mid-thirties of acid burdening at Corby in Northamptonshire where the ores are also silicious, the large scale working of Salzgitter ores became a practical proposition provided a works was erected on the spot. In pursuance of its policy of aiming at raw material self-sufficiency the Nazi Government therefore decided to build such a plant and to link it by a special canal with the Mittelland Canal so as to provide cheap transport to and from the Ruhr. In the barges bringing the necessary coking coal for the works' own coke ovens it was planned to send back Salzgitter ore to the Ruhr works. Thus, as a result of Government action, conditions were created for the use of Salzgitter ores to an extent far exceeding anything conceived by the Prussian Geological substitute.

There are now a number of iron ore mines in operation in this area. As already indicated some are of the surface or quarry type and none represent suitable "objectives".

-----oO-----

SALZWEDEL (Province Saxony)

52° 50' N. 11° 10' E: 490 miles: (17,000)

Salzwedel is in the North of the Prussian province of Saxony and is on a railway line leading from Berlin via Stendal to Bremen. It is a junction for five minor branch lines serving the surrounding district. Apart from the railway repair shops and the sugar refinery mentioned below, there are no industries of importance. Salzwedel is the market centre for a large agricultural area.

Transportation

Railway Repair Shops Salzwedel (3)

These are medium-sized repair shops undertaking mainly the repair of goods wagons.

Stuffs

Zuckerfabrik Salzwedel (-)

The Zuckerfabrik Salzwedel A.G. is a sugar refinery which employed some 500 workers in 1938 when its average daily consumption of sugar beet during the season was 60,000 quintals.

-----oO-----

SANGERHAUSEN (Province Saxony)

51° 30' N. 11° 20' E: 500 miles: (13,000)

Sangerhausen is 30 miles West of Halle on the main line leading from Halle and Leipzig via Kassel to the Ruhr. It has a number of iron foundries, one of which is mentioned below, and two cycle factories. The other activities of this town are mainly concerned with agriculture.

Engineering and Armaments

Maschinenfabrik Sangerhausen (3)

The Maschinenfabrik Sangerhausen A.G. are makers of installations for sugar refineries, containers and apparatus for the chemical industry, steam engines, and pumps. They employed some 900 workers before the war.

Mifa Sangerhausen (3)

The Sangerhausen works of the Mitteldutsche Fahrradwerke G.m.b.H. normally manufacture bicycles. They are now reported to be making minor aircraft components, and to be employing some 700 workers, including a proportion of P's/W.

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ST. INGBERT/

ST. INGBERT (Saar)

49° 15' N. 7° 5' E: 355 miles: (23,000)

St. Ingbert is 8 miles North-east of Saarbrücken on the railway line to Homburg. The town is on the Eastern outskirts of the large coalfield which extends Northwards from Saarbrücken. The principal mines of this area are dealt with under the heading Saarbrücken. Apart from the explosives works and the steel rolling plant the industries of St. Ingbert are not on a large scale. They include glassmaking, leather, cotton spinning, and hosiery manufacture.

Iron and Steel and Ferro Alloys

H. A. D. J. R.

St. Ingbert (3)

The St. Ingbert works of the Hochofen & Stahlwerke A. G. Differdingen-St. Ingbert-Rümelingen include steel rolling mills and produce bars, sheet metal, rails, and wire.

Chemicals and Explosives

Pulverfabriken

St. Ingbert (3)

The Pfälzische Pulverfabriken St. Ingbert G. m. b. H. is mainly owned by the Dynamit A. G. vorm. Alfred Nobel & Co., and produce nitro-cellulose and various other explosives and chemicals. This works was formerly the chemical factory of the firm Gebr. Martin.

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ST. WENDEL

ST. WENDEL (Saar)

49° 30' N. 7° 10' E: 345 miles: (9,000)

St. Wendel is 10 miles North of Neunkirchen in the Northeastern corner of the Saar territory. Apart from the railway workshops mentioned below, the industries, which include brick and tile manufacture, are not of great importance.

Transportation

Railway Repair Shops St. Wendel (3)

These are medium-sized workshops employing some 600 workers and undertaking mainly the repair of goods wagons.

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SCHKEUDITZ (Province Saxony)

51° 25' N. 12° 10' E: 530 miles: (14,500)

Schkeuditz is midway on the railway line connecting Halle with Leipzig, being 9 miles distant from either city. There is an airport which in peacetime served for the Halle and Leipzig traffic. There are a number of engineering firms, one of which is mentioned below, and an important branch factory of the Siebel aircraft works in Halle has now been established in Schkeuditz. In peacetime the preparation of fur clothing formed one of the town's main industries.

Aircraft and Aero Engines

Siebel Schkeuditz (1)

This is a branch works of the Siebel Flugzeugwerke Halle K.G. of Halle. The Schkeuditz plant is mainly engaged on the assembly of Ju-88's and imports components from the parent works at Halle and from Leipzig. The factory site includes a large aircraft-repair depot where work on Ju., F.W., He., and Si. types is undertaken. More than 2,000 workers are believed to be employed at Schkeuditz.

Engineering and Armaments

C. Emke & Co. Schkeuditz (3)

The Carl Emke & Co. Spezialfabrik für Pumpen & Gebläsemaschinen manufacture all kinds of pumps (including deep wellpumps), rotary fans, and ventilating apparatus.

-----oOo-----

SCHKOPAU (Province Saxony)

51° 20' N. 12° E: 520 miles: (2,000)

The village of Schkopau is on the left bank of the River Saale 8 miles South of Halle and is 3 miles North of Merseburg and the large synthetic-oil plant at Leuna. Schkopau is the site of the highly important synthetic rubber plant which is described below. The population given above is the pre-war figure and does not include the workers' colonies which have now been erected.

Public/

SCHKOPAU (Province Saxony) (Contd.)

Public Utility Services

Electric Power Station

Schkopau

(1)

The electric power plant which supplies current to the synthetic-rubber works at Schkopau consists of two generating stations with a combined capacity of 150 MW. The station is owned by the Buna Werke G.m.b.H. The second generating station was still under construction in 1942 but is assumed to be now complete. It is probable that most if not all of their combined electrical output is supplied to the rubber plant, the demand of which is probably a minimum of 125 MW with an annual requirement of about 900 million kWh. A substation connects the plant to the grid at an operating voltage of probably 110 kV. It is probable that one line connects to Gross Kayna and one to Leuna.

Steam

Rubber and Tyres

Buna Werke

Schkopau

(1+)

The Schkopau plant of the Buna Werke G.m.b.H. is the largest of the German synthetic rubber plants. The original experimental works were begun in 1936, and the present factory first went into production in 1939 with a planned final capacity of 25,000 tons per annum. Further expansions of the works during the war have increased this capacity to at least 50,000 tons per annum. This exceeds the present estimated capacity of the Hüls works, the second of the two leading German synthetic rubber plants, which is described under the heading Marl. The Schkopau plant produces the synthetic rubber from carbide, whereas the Hüls plant operates from methane-ethane gas. At least 20,000 workers are believed to be employed at the Schkopau factory. There are workers' colonies both at Schkopau and in the neighbouring settlement of Merseburg, and a large proportion of the labour travels daily from Halle.

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SCHLEBUSCH (Rhineland)

See under Leverkusen.

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SCHLUCHSEE (Baden)

See under Waldshut.

-----oOo-----

SCHLESWIG/

SCHLESWIG (Schleswig Holstein)

54° 30' N. 9° 35' E: 455 miles: (22,000)

Schleswig is 20 miles South of Flensburg on the main line from Hamburg through Flensburg into Denmark. It lies at the inner end of the Schlei, a narrow fjord, the mouth of which is at Kappeln on the Baltic 18 miles to the North East. There are various minor industries, including leather working, dairy produce, roof-felt and furniture making, but the main activities are connected with agriculture.

-----oO-----

SCHNEIDEMÜHL (Pomerania)

53° 10' N. 16° 45' E: 720 miles: (42,000)

Schneidemühl is on the Eastern border of Pomerania close to the former Polish Corridor. It is an important railway junction on the main route from Berlin to the East. It is a garrison town. Schneidemühl's main activities are connected mainly with agriculture, and there are several engineering works which manufactured agricultural machinery. During the war an aircraft factory has been established in Schneidemühl which is believed to have taken over some of the former production of Focke Wulf of Bremen.

Transportation

Railway Junction Schneidemühl (2)

The trunk line from Berlin and Northern Germany to the East divides at Schneidemühl (before entering the former Polish Corridor) into two main branches, one leading to Danzig, Königsberg and the Northern sectors of the Eastern Front; the second through Thorn to Warsaw. Both of these are important railway arteries. A branch line leads Northwards from Schneidemühl via Neustettin to Belgard, and another Southwards to Posen. Two further minor branch lines serve the districts to the North-west and South-west.

Marshalling Yards Schneidemühl (3)

These marshalling yards are capable of handling up to 2,200 wagons per 24 hours.

Railway Repair Shops Schneidemühl (3)

These are medium sized workshops undertaking chiefly the repair of goods wagons.

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SCHÖNEBECK/

SCHÖNEBECK (Province Saxony)

52° N. 11° 45' E: 510 miles: (36,000)

Schönebeck is on the left bank of the Elbe 9 miles South of Magdeburg. South of and adjoining Schönebeck is the settlement of Bad Salzelmen where there are extensive installations for curative brine baths. Bad Salzelmen is included in the administrative area of Schönebeck.

A chemical industry had developed in this town, which owed its origin to the brine deposits in the neighbourhood; this industry is now making explosives. There is also a large ammunition factory and an aero-engine and aircraft components works of the Junkers concern.

Aircraft and Aero Engines

Junkers Flugzeug & Motorenwerke

Schönebeck (2)

The Junkers works at Schönebeck occupy a large area to the East of the town and are believed to be still in process of expansion. In January 1944 a number of new buildings were being erected. The plant is engaged on the manufacture and erection of control columns and engine-bearings, under-carriages and other aircraft and aero-engine components. Its products are supplied mainly to the Junkers works at Bernburg.

Engineering and Armaments

Patronen Zündhütchen

Bad Salzelmen (2)

The Patronen Zündhütchen & Metallwarenfabrik A.G., are makers of cartridges, percussion caps, detonators, and S.A.A. They have also a section which makes machines and machine tools for their own works. The factory, in which at least 2,000 workers are employed occupies a large area to the West of Bad Salzelmen. This company is jointly owned by the Dynamit A.G. and Rheinmetall Borsig.

Chemicals and Explosives

Lignose

Bad Salzelmen (2)

This factory is operated by the Lignose Sprengstoff G.m.b.H. Ground reports have suggested that the output of T.N.T. at this plant is very large indeed. Some reports put it as high as 60,000 tons per annum. Examination of photographic cover prior to the attack on the plant early in 1944 suggests that on the basis of the size of buildings, etc., the T.N.T. capacity may be of the order of 40,000 tons per annum. There are two large T.N.T. manufacturing units which appear to be identical, and one smaller unit of somewhat different layout. Some new construction/

SCHÖNEBECK (Province Saxony) (Contd)

construction was then in hand, but it is not yet clear whether this was intended for high-explosives manufacture or not. The photographs suggest that, in addition to T.N.T. amatol is also prepared in this plant by mixing some part of the T.N.T. production with ammonium nitrate. This may be the explanation of the very high figures for T.N.T. output which have been given from some sources.

Ground sources have suggested that there are two factories making explosives at Schönebeck. This is not confirmed by air photographs, and it is suggested that the second explosives factory reported is in fact the Patronen Zündhütchen und Metallwarenfabrik, which is a fuse-making establishment in the neighbourhood, and which has mounded buildings for the storage of explosives and detonators.

The high-explosives factory lies in open country on rising ground on the south bank of the river Elbe, about 2 km. due west of Schönebeck railway station, and $1\frac{1}{2}$ km. south-west from the river bank.

Ground reports have stated that shells are also filled in this factory, but air photographs do not confirm this, and it would be very unusual practice to use an explosives factory for filling weapons. It is probable, however, that there is a filling factory in the immediate neighbourhood.

The factory was almost completely destroyed only in 1944, probably as a by-product of the raid of January 21/22, 1944 on Magdeburg.

Chemische Werke

Schönebeck (-)

The Chemische Werke Schönebeck A.G. are makers of heavy chemicals, including hydrochloric acid, sodium sulphate and finished materials for the ceramic industry. They employed some 500 workers before the war.

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SCHÖNINGEN (Brunswick)

52° 10' N. 11° E: 475 miles: (10,000)

Schöningen is 15 miles South-east of the town of Brunswick and is on a branch railway line leading from Magdeburg via Wolfenbüttel to Brunswick. There are small iron foundries and makers of agricultural machinery and implements including dairy equipment; tiles and earthenware pipes are also produced.

Chemicals/

SCHÖNINGEN (Brunswick) (Contd.)

Chemicals and Explosives

Bourjau & Co.

Schöningen (-)

The Bourjau & Co. K.G. is owned jointly by the I.G. Farben and the Sachtleben A.G. of Homberg. Bourjau are dye manufacturers and producers of lithopone.

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SCHRAMBERG (Württemberg)

48° 15' N. 8° 25' E; 440 miles: (16,000)

Schramberg is in the central area of the Black Forest 30 miles North-east of Freiburg. It is at the terminus of a small branch railway from Schiltach which in its turn is connected at Hausach with the main railway line from Offenburg through the Black Forest to Donaueschingen. As with many similar remote towns in the Black Forest, watch and clock making is the traditional industry. In the case of Schramberg, however, the development of the firm of Junghans has given the town outstanding importance in this branch. Apart from a few minor watch makers, the activities of Schramberg are entirely concerned with the Junghans works.

Engineering and Armaments

Junghans

Schramberg (1)

The Gebr. Junghans A.G. Uhrenfabriken are the largest individual firm of watch and clock makers in the Black Forest area. In peacetime they employed some 5,000 workers and were capable of producing watches and clocks at the rate of 27,000 daily. The parent works of the concern are in Schramberg and include, in addition to the large watch-making factory, a section devoted to the manufacture of the precision tools required in this industry. A separate saw mill and woodworking factory, also in Schramberg, prepares the wooden casings for the clocks. The works has its own hydro-electric power plant. A branch factory in Lehengericht, 5 miles North of Schramberg, makes watch springs. There is a second smaller watch factory in Schwenningen 15 miles to the South East of Schramberg, and a components factory in Rottenburg 30 miles to the North-east of Schramberg.

The factories in Schramberg, which are now said to number three separate plants, are believed to employ some 13,000 workers and, in addition to a fairly wide range of precision instruments, are now largely turned over to the manufacture of fuzes.
/Together

SCHRAMBERG (contd.)

Junghans (contd.)

Together with the firm Gebr. Thiel of Ruhla in Thuringia, this production of fuzes is reported to amount to 100,000 daily. There is an apprentices' school in Schramberg where up to 200 mechanics and watch makers are under training. During the latter half of 1943 the number of foreign workers, which had hitherto been small, was increasing continually, mostly Frenchmen and Ukrainians of both sexes being engaged.

Although the firm's payroll has increased from 5,000 to 13,000 in the course of the war it is unlikely that the number of workers actually employed in the Junghans factories has increased to any major extent because they were already working to capacity before the war. It is assumed that some 7,000 to 8,000 workers are employed by sub-contractors or are "home workers".

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SCHWABACH

SCHWABACH (Bavaria)

49° 20' N. 11° E: 515 miles: (15,000)

Schwabach is 7 miles South of Nürnberg on the main railway line to Munich. The town has specialised for many generations in the production of needles of all kinds, and also in the manufacture of gold and silver leaf. The industries are in the hands of a number of small and medium-sized firms which employ practically the whole working population of the town, and which in peacetime did a large export trade. The firms mentioned below are given as examples. It is believed that their production is now largely turned over to armaments.

Engineering and Armaments

Drei-S Werk	Schwabach	} (-)
Staedter & Uhl	Schwabach	

The above are two examples of a number of factories in Schwabach making needles for all purposes, including special needles for the textile industry, surgical needles, and gramophone needles. It is reported that these plants are now producing machine-gun and small-arms components and precision parts for aircraft.

Hüttlinger	Schwabach	(3)
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Johann Leonhard Hüttlinger is one of several small firms in Schwabach which specialise in making coiled and spiral metal springs and other fine wire products.

Peter Schlüpfinger	Schwabach	} (-)
Fritz Ronetsch	Schwabach	

The above are examples of a large number of small firms and workshops in Schwabach engaged in gold beating and the manufacture of gold and silver leaf.

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SCHWÄBISCH-GMÜND (Württemberg)

48° 50' N. 9° 50' E: 480 miles: (22,000)

Schwäbisch-Gmünd is 26 miles East of Stuttgart. The town specialises in gold and silver products, the manufacture of real and imitation jewellery, and in small metal goods of silver and silver alloys. There is a large number of firms engaged in this trade, none of which is individually of great importance. There is also a branch works of the Zahnradfabrik Friedrichshafen A.G., makers of gears and gearboxes (see under Friedrichshafen).

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SCHWÄBISCH-HALL/

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SCHWABISCH-HALL (Württemberg)

49° 5' N. 9° 45' E: 465 miles: (15,000)

Schwäbisch-Hall is 30 miles North-east of Stuttgart on the main line connecting Stuttgart with Nürnberg. It is primarily a health resort and noted for its curative brine baths. The industries include production of building materials and a cotton spinning mill, and the manufacture of electrical cooking and heating appliances. None is of individual importance.

Engineering and Armaments

Fr. Gross Jr. A.G.

Schwäbisch-Hall (-)

The Fr. Gross Jr. A.G. are makers of electric kettles, cooking utensils, electrically-heated cushions, and similar products. They employed 400 workers before the war.

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SCHWANDORF (Bavaria)

49° 20' N. 12° 5' E: 555 miles: (11,000)

Schwandorf is on the river Nab, a tributary of the Danube, and is 15 miles North of Regensburg. It is on the main North to South railway line from Hof via Regensburg to Munich and is the junction for a branch line leading Eastwards to Furth im Walde on the former Austrian frontier. There is an important alumina works belonging to the Vawag and a large thermal power station. The other industries include porcelain manufacture and the exploitation of the brown-coal deposits in this neighbourhood.

Public Utility

Power Station

Schwandorf (2)

The thermal power station known as the Kraftwerk Else is situated half a mile South of the Nabwerk alumina plant referred to under Non-ferrous Metals, and adjacent to the brown-coal deposit from which it draws its fuel supplies. It is owned by Bayernwerk A.G. and has an installed capacity of 81 MW with provision for expansion to an ultimate capacity of 180 MW. Steam as well as electricity are supplied to the alumina works.

The station is on the main 110-kV N-S line connected to Chemnitz and Böhlen in the North and to the Mittlere Isar hydro stations, Munich, and Walchensee in the South. An outdoor switching and transformer station adjoins and has switchgear for 35kV and 110kV.

Double-circuit long-distance 110kV lines connect to the Bayernwerk grid at Amberg, forking there to Nürnberg, and South to Regensburg and Munich, forking at Regensburg to Kachlet.

Non/

SCHWANDORF (Bavaria) (Contd.)

Non-Ferrous Metals Manufacture & Fabrication

Vawag

Schwandorf (1)

The important Schwandorf works of the Vereinigte Aluminium Werke A.G., known as the Nabwerk, has an annual estimated capacity of 80,000 tons of alumina. Deliveries of alumina are made by this plant to the aluminium reduction plant at Töging (see under Mühldorf) and to the very important new aluminium reduction plant at Braunau am Im (Austria).

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SCHWEIDNITZ (Silesia)

50° 50' N. 16° 30' E: 720 miles: (35,000)

Schweidnitz is 28 miles South-west of Breslau and is on the main railway line from Liegnitz via Neisse to Upper Silesia. A branch line connects the town directly with Breslau. Schweidnitz is mainly an agricultural centre, but the electrical engineering works mentioned below is of some importance, and there is also a small textile industry. At Saarau 6 miles North of Schweidnitz there is a small synthetic rubber plant belonging to the Thiokol Ges. m. b. H.

Transportation

Railway Repair Shops

Schweidnitz (3)

These are medium-sized repair shops undertaking the repair of goods wagons. Some 800 workers are employed.

Rubber and Tyres

Thiokol

Saarau (3)
6 miles N.
of Schweidnitz

The Thiokol Ges. m. b. H., a subsidiary company of the Silesia Verein Chemischer Fabriken, has a plant in Saarau which was erected in 1937 to produce Thiokol under licence from the Thiokol Corporation of America. The polysulphide process is used and the present annual capacity is estimated at 1,000 tons.

Engineering and Armaments

Heliowatt

Schweidnitz (3)

The Heliowatt Werke Elektrizitäts A. G., whose parent works are in Berlin, have a branch factory in Schweidnitz which before the war employed approximately 1,000 workers. This firm manufactures electrical clocks and measuring instruments, switch gear and radio apparatus.

Främsy

SCHWEIDNITZ (Silesia) (Contd)

Främs & Freudenberg

Schweidnitz (3)

The works of this firm include an iron foundry and produce pumps, mining machinery, boilers, stationary engines, and machinery for sugar factories and for the preparation of flax. Some 400 workers were employed before the war.

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SCHWEINFURT (Bavaria)

50° 5' N. 10° 15' E: 460 miles: (60,000)

Schweinfurt is in the North-western area of Bavaria on the North bank of the River Main, 25 miles North-west of Würzburg. It is on the railway route from Northern Germany to Stuttgart and on the East to West line from Bamberg to Mainz and the Rhine valley.

The Main is already navigable for heavy barges as far as Aschaffenburg, but it is possible that the project to connect the Main with the Danube has already progressed upstream beyond Schweinfurt, in which case the hitherto small inland harbour will have increased in importance.

Schweinfurt is the largest centre of the German ball bearing industry and normally produces well over half the total requirements. This manufacture is carried on mainly in four large factories which are grouped round the main railway station on the South-western outskirts of the town. The technical equipment and individual skill required in this industry, on which many engineering and armament branches depend have been developed over a long period and have made Schweinfurt a highly specialised industrial community which it is difficult to transplant or replace.

As a result of several bombing attacks very severe damage has been done to the four principal factories.

Transportation

Inland Harbour

Schweinfurt (3)

There is a small harbour on the North bank of the River Main in the industrial district of Schweinfurt to the West of the town centre. This harbour, which is served by railway sidings, is close to the V.K.F. plant. Until 1939 only the smaller barges could proceed up the Main beyond Aschaffenburg, but it is possible that the Main-Danube canal project is now sufficiently advanced for heavier traffic to reach Schweinfurt and Bamberg.

Railway/

SCHWEINFURT (Bavaria) (Contd)

Railway Junction Schweinfurt (3)

The main railway station at Schweinfurt is West of the town centre in the industrial quarter and in the midst of the chief factories which are mentioned below. The main line down the Main valley from Bamberg to Würzburg passes through Schweinfurt, and immediately West of the main railway station an important branch diverges and leads Northwards to Meiningen. A minor branch leads South-east to Gerolzhofen.

Railway Repair Shops Schweinfurt (3)

These are medium-sized repair shops which undertake the repair and maintenance of locomotives and goods wagons. They adjoin the main railway station.

Goods Yards Schweinfurt (3)

Adjacent to the main railway station are a series of goods yards and sidings which serve the large factories grouped round this area.

Public Utility Services

Power Stations Schweinfurt (3)

The three important ball-bearing firms referred to below under Engineering and Armaments have a thermal power station attached to each; the station at the Fichtel & Sachs works has a reported installed capacity of 20 MW. and the other two stations a capacity of 11 MW respectively.

Substation Schweinfurt (3)

A substation connects the town area to the 110 KV lines coming from the substations at Bamberg to the S.E. and Würzburg to the S.W.

SCHWEINFURT/

SCHWEINFURT (Contd)

Engineering and Armaments

V.K.F.

When in full production the group of Schweinfurt factories belonging to this concern formed by far the most important unit in the German ball-bearing industry. The V.K.F. group employed at least 10,000 workers. The chief plants are described below. This concern extended its range of production during the war to include taper-roller, barrel-roller and the heaviest types of bearings.

V.K.F. Werk I (Schweinfurter Präzisions-
Kugellagerwerke Fichtel & Sachs,
Wälzlager Abteilung) Schweinfurt (1)[Ⓜ]

This factory was purchased from the Schweinfurt firm of Fichtel & Sachs in 1929. In 1938, 3,000 to 3,500 workers were employed. It produced all types of bearing, including the majority of the German output of precision bearings, and concentrated particularly on the finishing and assembling processes, receiving part of its requirements of semi-products from V.K.F. Werk II and other sources.

V.K.F. Werk II (Deutsche Gusstahlkugel &
Maschinenfabrik A.G. vorm.
Fries & Höpflinger) Schweinfurt (1)[Ⓜ]

This factory was also acquired in 1929. It produced all types of bearings, and was also engaged in the production of balls and the machining of races for Werk I, where the finishing and final assembly was carried out. 4,500 to 5,000 workers were employed in 1938. It is believed that the plant has been extended since the war by taking over neighbouring premises.

In addition to standard varieties of bearing, these two works have also, in recent years, taken up the manufacture of the heaviest types of bearings, as well as taper-roller and barrel-roller bearings. These had formerly been imported from Sweden.

Deutsche Star Kugelhalter G.m.b.H. Schweinfurt (2)[Ⓜ]

The section of the V.K.F. concern known as the Deutsche Star Kugelhalter G.m.b.H. was before the war engaged exclusively on the production of ball-bearing cages. They supplied these to the other ball bearing factories in Schweinfurt and to the open market. Approximately 1,000 workers were employed.

[Ⓜ] The priority ratings are based on the pre-raid value of these objectives.

Kugelfischer/

SCHWEINFURT (Contd)

Kugelfischer (Erste Automatische Gusstahlfabrik Schweinfurt (1)^{**}
vormals F. Fischer)

The Schweinfurt plant of the Kugelfischer Schoefer A.G. combine is immediately North of the railway line and main station. It is the largest single factory in the German ball bearing industry and produced all types of ball and roller bearings, with the exception of the heaviest industrial bearings, before the war. 5,000 to 6,000 hands were employed in 1938, but figure had risen to 7,000 by 1939. The size of the works has been much increased since the outbreak of war. It is, therefore, the largest individual factory in the German ball bearing industry, and reports received prior to the air attacks suggested that as many as 12,000 workers were employed.

Fichtel & Sachs

Ernst Sachs (1)^{**}
Str.

The ball bearing factory belonging to this firm was taken over by the V.K.F. and is now Werk I of that concern as mentioned above. The firm of Fichtel & Sachs, though possibly now affiliated with the V.K.F. concern, still retains its identity and continues to operate under its own name. The works make light weight motorcycles, motor boat engines, cycle hubs and other motor vehicle components, including the F & S patent clutch which is widely used in the German motor industry. A limited range of small ball-bearings for use in their own products is produced in the section of the plant retained by Fichtel & Sachs. The works has been enlarged since 1939 and reports suggest that the new workshops are mainly engaged on the manufacture of motor vehicle components for the open market and small arms components and ammunition.

Chemicals and Explosives

Deutsche Gelatine

Schweinfurt (3)

The Deutsche Gelatine Fabriken, whose works are North East of the main railway station, manufacture gelatine in powder and in sheet form for food and technical purposes. The products include photographic gelatine for film and paper emulsions, and a special gelatine for use as a protecting separative for photographic films. This firm is the best known producer of photographic gelatine in Germany. Some 800 workers are employed.

* The priority ratings are based on the pre-raid value of these objectives.

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SCHWELM (Westphalia)

See under Hagen

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SCHWENNINGEN (Württemberg)

48° 5' N. 8° 30' E: 455 miles: (22,000)

Schwenningen is in the South-western area of Württemberg on the Eastern side of the Black Forest. It is one of the centres of the watch and clock making industry which has long been a speciality of this part of Germany. The principal individual firms are mentioned below, but a great deal of the work, which engages most of the population of Schwenningen, is carried on in small workshops dispersed throughout the town, many of which are in the workers' own homes. The only other industry worth noting is the manufacture of boots and leggings, which is represented by four firms, one of which is mentioned below.

Engineering and Armaments

Kienzle Schwenningen (2)

The Kienzle Uhrenfabriken A.G., which is believed to employ some 1,500 workers on its own premises and at least an equal number in outside workshops, makes watches, clocks, and indicators and precision instruments for aircraft, motor vehicles, and for naval purposes.

Müller-Schlenker Schwenningen (3)

The firm of Müller-Schlenker, which is another example of several such firms in Schwenningen, normally manufactures clocks and watches of all kinds. A report mentions this firm as undertaking the assembly of a type of clockwork-operated small bomb intended to be dropped on to hostile aircraft.

Friedrich Mauthe G.m.b.H. Schwenningen)
T.E.Haller G.m.b.H. Schwenningen) (2)
Bürk Söhne K.G. Schwenningen)

The above are three examples of a large number of clock and watch making firms in Schwenningen which in the aggregate form an important source of supply of clockwork, timepieces, and precision instruments required by the armed forces.

Leather

Jakob Bürk Schwenningen (-)

The firm of Jakob Bürk K.G. is one of four factories in Schwenningen making boots, shoes, and leggings.

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SCHWERIN

SCHWERIN (Mecklenburg)

53° 35' N. 11° 25' E: 510 miles: (60,000)

Schwerin is a garrison town, the capital of the former Grand Duchy, and the present administrative centre of the Province of Mecklenburg. It is on the Western shore of the Schweriner See, a large lake 15 miles South of Wismar, on the Baltic. Mecklenburg is an important agricultural area, and Schwerin is one of the principal market centres. It is on the railway line from Wismar, which joins the main Berlin-Hamburg line at Ludwigslust, 20 miles to the South. In peacetime there are no industries of note, but recent reports indicate that the Heinkel works of Rostock have a branch at Schwerin which is attaining some importance.

Transportation

Railway Repair Shops Schwerin (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

Aircraft and Aero Engines

Heinkel Flugzeugwerke Schwerin (-)

It has been suggested that the Heinkel works of Rostock have, in 1943, established branch factories in Schwerin and at Bad Kleinen at the Northern end of the Schwerin Lake on the railway line to Wismar. The report suggests that a new type of heavy 4-engined flying boat is being built. The report has so far remained unconfirmed.

SCHWERTE/

SCHWERTE (Westphalia)

51° 25' N. 7° 35' E: 330 miles: (19,000)

Schwerte is situated on the northern bank of the river Ruhr and at the South-eastern extremity of the Ruhr industrial area. Included in the district under consideration are the smaller settlements of Wellinghofen, Benninghofen, Westhofen, Wandhofen, Lichtendorf, Holzen, and Geisecke. Industry is mainly concerned with metal working, but there are also railway repair shops and marshalling yards.

Transportation

Railway Repair Workshops

North-east of Schwerte (3)

4/5,000 workers are engaged on repairs to heavy goods locomotives. There are, on an average, 100/150 locomotives undergoing repairs in the workshops.

Marshalling Yards

Geisecke and West of Schwerte(2)

The marshalling yards at Schwerte lie at Geisecke, North-east of Schwerte, and West of Schwerte. The Geisecke yards have the capacity to deal with 3,000 wagons per 24 hours, and those to the West of the town a capacity to deal with 2,200 wagons.

Iron, Steel and Ferro-Alloys

Schwerter Profileisenwerk A.G.

Schwerte (2)

This firm is a subsidiary of the Vereinigte Stahlwerke A.G. The works includes iron and steel rolling mills and a bar-drawing shop, and produces fittings, pressings and sections for locomotives, heavy lorries, cars, etc. The works cover an area of about 49 hectares.

Non-Ferrous Metals and Alloys

V.D.N. Werke A.G.

W.Schwerte (2)

The Vereinigte Deutsche Nickel Werke A.G., also known as "Basse und Selve" was formerly owned by the Westfälische Nickelwalzwerk Fleitmann Witte & Co. The factory has an estimated productive capacity of 150 tons per annum, and covers an area of 60,000 square metres. The plant comprises smelting works, sheet rolling-mills, wire and pipe drawing shops. Various non-ferrous alloys are produced as well as "bimetals", i.e. metal-clad steel sheets. The Schwerte branch specialises in the production of nickel-clad steel, which is of use in the manufacture of cartridges and bullet casings. Peace-time products were bars, sheets, pipes, and wires of nickel, copper, brass, and aluminium and other alloys, also coin blanks and kitchen and/

SCHWERTE (Westphalia) (Contd)

and tableware. Additional war-time products are hand-grenades and steel helmets. In 1939 this factory was said to employ some 2,000 workers.

Vereinigte Deutsche Nickelwerke A.G.
Metallwerke Wandhofen Schwerte (2)

This works, which belongs to Vereinigte Deutsche Nickelwerke A.G., adjoins the main factory at Schwerte and is now engaged in the manufacture of small-arms ammunition.

Engineering and Armaments

Stahlwerke Brüninghaus A.G. Westhofen (3)

Mining machinery and narrow-gauge railway rolling-stock are produced here.

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SENFTENBERG (Brandenburg)

51° 30' N. 14° E: 605 miles: (19,000)

Senftenberg is in the extreme South of the Province of Brandenburg close to the borders of Lower Silesia and of the Prussian province of Saxony. Some of the surrounding villages which are mentioned below are in Province Saxony, and Ruhland, 7 miles South West of Senftenberg, is in Lower Silesia. Senftenberg is 20 miles South-west of Cottbus on a branch railway from Cottbus via Grossenhain to Dresden. It is in the centre of the Niederlausitz brown-coal deposits, the exploitation of which forms its main industry. In addition to the two important groups of mines described below, there are a number of smaller brown-coal pits, of which two are described under the heading Annahütte. Immediately North of the village of Ruhland is an important synthetic-oil plant which is mentioned below. Three large thermal power stations derive their fuel from the brown-coal deposits in this area.

Transportation

Marshalling Yards Senftenberg (3)

The Senftenberg marshalling yards are capable of handling up to 4,000 wagons per 24 hours.

Public Utility Services

Power and Gas Works Senftenberg (3)

The Gas- u. Elektrizitätswerke Senftenberg A.G. supplies electricity and gas to the town. Electricity is purchased indirectly from the Erica, Renate, and Marga power stations of the Ilse Bergbau A.G.

Power/

SENFTENBERG (Brandenburg) (Contd)

Power Station

Lauchhammer

(2)

The thermal power station belonging to the steel works of the Mitteldeutsche Stahlwerke A.G. is situated 2 miles S.E. of the Marie-Anne pit referred to under Solid Fuels. It has an installed capacity of 98 MW. The output is mainly supplied to the steel works and also to the Company's 2 other works at Gröditz and Riesa. It is probable that the plant has been considerably enlarged but no recent information is available. There are 2 and possibly 3 generator houses, and an indoor substation. A double-circuit long-distance 110 kV line connects to Gröditz and from there to Riesa. There is probably a line to the Marie-Anne and Ruhland-Schwarzheide stations.

A local line at 15 kV connects to nearby pits.

Power Station

Marie-Anne Pit
Mückenberg

(2)

This thermal power station is adjacent to the Marie-Anne brown-coal mine some 6 miles west of Senftenberg. The plant, which is owned by the Braunkohlen & Brikettindustrie A.G. (Bubiag), Mückenberg, has an installed capacity of 91 MW. The plant was considerably extended in 1939 suggesting new industrial development nearby. It is probable that the greater part of the output is consumed by the Dr. Alex. Wacker carbide plant at Mückenberg referred to under Chemicals & Explosives and that other undertakings are also supplied. The station is probably connected to the other power stations nearby. Nothing is known of long-distance supplies.

Power Station

Ruhland-
Schwarzheide

(2)

This thermal power plant forms part of the synthetic-oil works at Schwarzheide near Ruhland, referred to below under Liquid Fuels. It has an installed capacity of 60 MW. The generating station supplies steam as well as electricity to the works; electricity is supplied through medium and low voltage underground cables and the station is probably connected to the nearby generating stations of Lauchhammer and Lauta.

Solid/

SENFTENBERG (Brandenburg) (Contd)

Solid Fuels

Bubiag

Senftenberg (3)

The Braunkohlen & Brikettindustrie A.G. (Bubiag) own two mines in the Senftenberg area. The first of these is the Marie-Anne mine at Kleinleipisch 6 miles West of Senftenberg, and the second the Karlgrube at Zschornegosda, 5 miles South-west of Senftenberg. These mines had an output of 4,200,000 tons of brown-coal in 1937. Some 3,000 workers are employed. The company owns four briquetting plants in the neighbourhood of Senftenberg which, in 1937, produced 1,400,000 tons of briquettes.

Mitteldeutsche Stahlwerke

Lauchhammer (3)

The Mitteldeutsche Stahlwerke A.G. have a brown-coal mine at Lauchhammer, 4 miles West of Senftenberg. This mine had an output of 1,600,000 tons of brown-coal in 1937 and employed some 700 workers. A briquetting plant, which in 1937 produced 400,000 tons, adjoins this mine. The company has a large steel plant described below under Iron and Steel, and its own power station mentioned above under Public Utilities.

Liquid Fuels

Brabag

Schwarzheide (1)

The Braunkohle-Benzin A.G. have a large synthetic-oil plant situated between the two villages of Ruhland and Schwarzheide, 4 miles South-west of Senftenberg. This plant makes oil from brown coal by the Fischer-Tropsch process. The annual output of synthetic fuel is estimated to be 350,000 tons.

Iron and Steel and Ferro Alloys

Stahlwerke

Lauchhammer (3)

The Mitteldeutsche Stahlwerke A.G., whose parent works are in Riesa, have a branch foundry in Lauchhammer 5 miles West of Senftenberg. They normally manufacture all varieties of iron castings, and are now reported to produce bomb and shell components. This company also owns the brown-coal mine and power station which are mentioned above under Solid Fuels and Public Utilities. Several thousand workers are employed at the Lauchhammer factory.

Engineering/

SENFTENBERG (Brandenburg) (Contd)

Engineering and Armaments

Kühnle, Kopp & Kausch

Senftenberg (3)

The Kühnle, Kopp & Kausch A.G., whose parent works are in Frankenthal, are reported to have erected a new factory in Senftenberg for the production of armaments, including shells and grenades. More than 1,000 workers are said to be employed.

Berg & Cie

Senftenberg (3)

The Niederlausitzer Eisenwerk Berg & Cie are reported to be employing some 1,500 workers on the manufacture of A.A. shells, particularly those of 2.5 cm. calibre.

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SIEGBURG (Rhineland)

50° 45' N. 7° 10' E: 320 miles: (22,000)

Siegburg is East of the Rhine and 10 miles South-east of Cologne. It is on the River Sieg, a tributary which flows into the Rhine opposite Bonn, 5 miles South-west of Siegburg. Two miles to the North-west of Siegburg is the neighbouring settlement of Troisdorf (which had a pre-war population of 10,000) where there are works belonging to the Klöckner concern and a large explosives factory. The industry of Siegburg itself, apart from the cellulose factory mentioned below, is largely the making of fire bricks and tiles, furniture making and woodworking.

Iron and Steel and Ferro Alloys

Klöckner

Troisdorf (3)

The Mannstaedt works of the Klöckner Werke A.G. at Troisdorf include a foundry and cold-rolling mills producing profiles, frames (including chassis frames), girders, sections, and forgings. The iron and steel plant belonging to this works is estimated to have an annual capacity of 50,000 tons of pig iron.

Chemicals and Explosives

Dynamit A.G.

Troisdorf (1)

This factory is operated by Dynamit A.G., and was of considerable importance in 1914/18. During the peace years the factory was greatly extended, and took over a great many activities, apart from the production of explosives. Not only is nitro-cellulose made in large quantities for the production of celluloid-type plastics, but a variety of other plastic materials, among/

SIEGBURG (Rhineland) (Contd.)

among which laminated articles made from bakelite are perhaps the most important, are also made here. It is quite likely that some explosive nitrocellulose is still manufactured here, and indeed this view is supported by the examination of air photographs. It is difficult to estimate what part of the nitrocellulose capacity is available for explosives manufacture. The total installed capacity represents about 12,000 tons per annum, but the majority of this will certainly be used for plastics manufacture.

The factory is important as being one of the largest producers of detonators in Germany. It introduced the manufacture of lead azide detonators in aluminium caps. Even before the war the production of these detonators was running at the rate of about 120 million per annum, and there is little doubt that it has been increased since. The factory prepares its own raw materials for detonators, having a sodium azide plant with an output in excess of 160 tons per annum.

The factory is situated 13 miles south-east of Cologne.

Textiles, Rayon, Pulp and Paper

Zellwolle A.G.

Siegburg

(3)

The Rheinische Zellwolle A.G. are makers of viscose staple fibre, for which they had a capacity of 60 tons per day. 500 workers were employed in this factory before the war. It is reported that these works are now largely engaged on producing cellulose for the explosives industry.

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SIEGEN (Westphalia)

50° 55' N. 8° E: 355 miles: (37,000)

Siegen is situated at the Northern end of the extensive iron-ore deposit of Siegerland-Wieder. The iron ore of this area is among the best that is mined in Germany; it is non-phosphoric and suitable for the production of spiegeleisen and also contains a proportion of manganese. In 1937 the area produced a minimum amount of 1,517,000 tons of iron ore and employed 4,900 workmen. The output was mostly consumed by local blast furnaces though a little found its way to Rhenisch-Westphalia. Siegen is also a junction for three minor branch lines. It is at the Southern end of a line of industrial settlements which extend, mostly along the valley of the River Lenne, from Siegen to the vicinity of Hagen, and which contain a large number of rolling mills, wire drawing, and metal working plants, and foundries. Siegen itself has a number of foundries specialising in the production of rollers for steel rolling mills, and is responsible for a high proportion of the German requirements of this essential component. The principal works of this kind are mentioned below. Another group 3 miles to the North of the town are dealt with under the heading Geisweid.

Transportation/

SIEGEN (Westphalia) (Contd.)

Transportation

Railway Repair Shops Siegen (3)

These repair shops employ some 1,500 workers and undertake the repair of goods wagons and all kinds of rolling stock.

Public Utility Services

Power station Siegen (3)

A small thermal power station was closed down in 1930 but has since been reported as working. In 1941 its capacity is reported to have been 40 MW.

Gasworks Siegen (3)

In 1936 the municipal gasworks bought 131 mill. cu.ft. of gas from the Westfälische Ferngas A.G.

Iron, steel and Ferro-Alloys

Sieg-Lahn Bergbau A.G. Siegen (-)

This company owns a group of mines South-west of Siegen. They produced 560,000 tons of iron ore in 1937 and employed 1,400 workmen.

Gewerkschaft "Eisenzeeher Zug" Eiserfeld-Siegen (-)

This company operates 2 mines at Eiserfeld, 6 miles south-west of Siegen. In 1937 the output of iron ore amounted to 163,000 tons and 660 workmen were employed.

Vereinigte Stahlwerke A.G. Eisern-Siegen (-)

This company owns 6 mines on the iron ore deposit at Eisern, 6 miles south of Siegen. In 1937 they had an output of 575,000 tons of iron ore and employed 2,100 workmen.

Bergbau-u. Hütten-A.G. Herdorf-Siegen (-)

This company owns a mine at Herdorf, producing 155,000 tons of iron ore and employing 400 workmen in 1937.

Grube Storch u. Schöneberg Gosenbach-Siegen (-)

This company works a mine at Gosenbach which produced 64,000 tons of iron ore and employed 330 men in 1937.

Engineering/

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SIEGEN (Westphalia) (Contd.)

Engineering and Armaments

Kölsch-Fölzer Kreuzweg (3)

The works of the Kölsch-Fölzer Werke A. G. comprise a roll foundry and a turning plant. They specialise in the production of rollers for all kinds of steel rolling mills, as well as rollers for use in the rubber and paper industries. Pressure gas containers and vessels for the chemical, cellulose, soap, and sugar industries are made. Before the war this firm employed approximately 1,000 workers.

Gontermann-Peipers Marienbornerstr. (3)

The Gontermann-Peipers A. G. für Walzenguss & Hüttenbetrieb have a range of products similar to Kölsch-Fölzer. They employed some 800 workers before the war. This firm has also a small iron and steel works in Eiserfeld, 3 miles South of Siegen.

Eisenbahnbedarf A. G. Wilhelmstr. (3)

The Siegener Eisenbahnbedarf A. G., which is owned by the Vereinigte Stahlwerke A. G., have a pressing and hammer works and normally manufacture railway wagons, railroad equipment, and large metal containers. They employed approximately 1,000 workers before the war.

Hüttenwerk Siegerland Hindenburgstr. (3)

The Hüttenwerk Siegerland A. G. is a large undertaking which employed a total of some 10,000 workers before the war. It belongs to the Vereinigte Stahlwerke A. G. of Düsseldorf. The Hüttenwerk owns a number of iron smelting works and rolling mills and exploits mainly the iron-ore deposits of the Siegerland. The head office and one of the smaller works is in Siegen, but the other plants are dispersed over the area of the Sieg and Lenne valleys, at Niederschelden 2 miles South of Siegen, Wissen 15 miles West of Siegen, Attendorn in the Lenne valley, Nachrodt near Hagen, and Hüsten near Neheim.

Maschinenbau A. G. Siegen (2)

The works of the Siegener Maschinenbau A. G. include an iron foundry, and employed approximately 1,000 workers before the war. They are now believed to be constructing components for U-boat Diesel engines.

Dango/

SIEGEN (Westphalia) (Contd)

Dango & Dienenthal

Siegen (3)

This firm is one of the principal German manufacturers of blast furnaces and blast furnace equipment. They produce charging machines, pig casting machines, Cowper stoves, gas valves and a full range of accessories.

Chemicals & Explosives

Dynamit A.G.

Wurgendorf (-)

This factory was operated by Dynamit A.G. in the last war, producing about 4 per cent. of Germany's cordite. It was officially closed down after the Armistice, but by 1933 a trade source reported that a number of modern explosives buildings had appeared on the site. It is reported to be in active production at the present time, and to be producing propellant powders on a moderate scale.

SIEGMAR-SCHÖN^WAU/

SIEGMAR-SCHÖNAU

50° 50' N. 12° 55' E: 565 miles: (19,000)

Siegmars-Schönau, though a separate municipality, adjoins Chemnitz on the Western side and has been dealt with under the heading Chemnitz.

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SIGMARINGEN (Hohenzollern)

48° 5' N. 9° 15' E: 455 miles: (6,000)

Sigmaringen is the administrative town of the outlying Prussian province of Hohenzollern, to the South-west of Württemberg. It is on the upper reaches of the River Danube and 20 miles North of the Western end of Lake Constance. Apart from the metal works mentioned below, there is no important industrial development.

Engineering and Armaments

Hohenzollernhütte

Laucherthal (2)

The Fürstlich Hohenzollern Hüttenverwaltung is situated in Laucherthal, a village near to Sigmaringendorf 3 miles South-east of Sigmaringen. The works comprise rolling mills and a wire-drawing plant. Sparking plugs and components for precision measuring instruments are produced, and supplied among others to Bosch, Mannesmann, Rheinmetall, and Junkers. These works are reported to have attained additional importance since 1943 as suppliers of the highest grade anti-friction bearings, particularly shell type anti-friction bearings, and bearing alloys.

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SINDELFINGEN (Württemberg)

48° 45' N. 9° E: 450 miles: (8,000)

Sindelfingen is 8 miles South-west of Stuttgart and lies immediately North of Böblingen, which is on the main line railway leading from Stuttgart to Schaffhausen and Zurich. Böblingen is dealt with separately. Sindelfingen owes its importance to the nearby airfield and to the new Daimler-Benz works. There are also reports that the Heinkel concern in conjunction with Hirth have erected an important new plant near Sindelfingen. To the North-east of Sindelfingen, in the settlement of Vaihingen, are a number of small works, including a textile factory which is mentioned below.

Non-Ferrous Metal Manufacture and Fabrication

Ernst Frank

Sindelfingen (3)

The works of this firm comprise an aluminium and brass foundry, and supply components to Robert Bosch of Stuttgart.

Aircraft/

SINDELFINGEN (Württemberg) (Contd)

Aircraft and Aero Engines

Hirth Motoren

Sindelfingen (-)

The Hirth Motoren concern, in conjunction with Heinkel, are reported to have built a large aero-engine works immediately to the South of the Sindelfingen aerodrome. These works are said to have been constructed underground and to be almost invisible from the air. They undertake the final machining of aero-engine components and the assembly of aero-engines. The components are said to be supplied by a number of Stuttgart firms, particularly Mahle and Bosch.

Daimler-Benz

Sindelfingen (-)

The Daimler-Benz plant at Sindelfingen, which primarily builds motorcar bodies, is now reported to have a series of aero-engine test beds where aero-engines built in the main factory of Daimler-Benz at Stuttgart-Unterturkheim are brought for testing.

Engineering and Armaments

Daimler-Benz A.G.

Sindelfingen (2)

The erection of the Sindelfingen body-building works of the Daimler-Benz concern was begun before the war, but it was only in 1941 that these works developed into the important plant which they now are. Several thousands of workers are believed to be now employed at this works, which is known to build heavy military transport on a large scale and is reported to be making tank components in at least one of its workshops.

Textiles, Rayon, Pulp and Paper

Trikotfabriken

Vaihingen (-)

The Vereinigte Trikotfabriken (R. Vollmoeller) A.G. are makers of hosiery and knitted goods. They have a second factory at Herrenberg, 10 miles South-west of Sindelfingen. Some 700 workers were employed before the war.

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SINGEN (Baden)

47° 45' N. 8° 50' E: 480 miles: (18,000)

Singen (Hohentwiel) is in the extreme South of Baden close to the Swiss frontier and 10 miles North-east of Schaffhausen (Switzerland). It is on the main railway line from Stuttgart to Zurich and is the German Customs Station for the traffic along this route. A branch line leads South-east from Singen to Konstanz 15 miles distant, where it joins the Swiss railway along the Southern shore of Lake Constance. The principal industries of Singen are mentioned below.

Non/

SINGEN (Baden) (Contd)

Non-Ferrous Metal Manufacture and Fabrication

Aluminium Walzwerke Singen (2)

The Aluminium Walzwerke Singen G.m.b.H. are fabricators of sheet aluminium, for which their mills have a capacity of 1,500 tons per month. They make a wide variety of aluminium alloys and coatings, including many which are their own patented specialities. They are also producers of aluminium foil. The works is an important supplier of materials to the aircraft industry and may itself undertake the manufacture of finished aircraft components.

Engineering and Armaments

Georg Fischer (Fittingwerke) Singen (2)

The A.G. der Eisen & Stahlwerke vorm. Georg Fischer are iron and steel founders and prior to the war specialised in fittings, connecting pieces, and joints for metal tubing, including high-pressure steam, gas, water, air, and vacuum pipe systems, central heating and drainage installations. They are a branch of the Swiss firm of the same name in Schaffhausen, and have another branch works in Mettmann in the Rhineland. The Singen works is now partly turned over to armaments and is producing mainly aerial bombs, mortar bombs of all types, and artillery shells of medium calibre. Other products include exhaust pipes for tanks and automobiles, and wheels and other motor transport components. The factory is now said to employ some 3,000 workers, a proportion of whom are drawn from Schaffhausen and the neighbouring parts of Switzerland.

Food Stuffs

Maggi G.m.b.H. Singen (3)

These are the chief works of this concern, which is the leading German maker of soup cubes and flavouring essences. They are now reported to be producing entirely for Government requirements and to be making food stuffs in compressed form for use by the armed forces.

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SOEST/

SOEST (Westphalia)

51° 35' N. 8° 5' E: 355 miles: (23,000)

Soest is 15 miles South-east of Hamm and is on a main railway line which leads from Saxony and Magdeburg to the Lower Rhineland. In addition to the large railway repair shops, the industries include several engineering works, the manufacture of electric light bulbs, and a number of metal-working firms making nuts, bolts, and rivets. Soest is also an agricultural centre, and there are large flour mills.

Transportation

Railway Junction Soest (3)

The East to West railway line through Halberstadt and Paderborn divides at Soest, one branch leading to Hamm, and the other to Dortmund. This line forms an important direct route from the Ruhr and Lower Rhineland to the Magdeburg and Brunswick areas and to Saxony. A branch line leads Southeast from Soest, and other minor branch railways serve the district to the North-west between Soest and Hamm.

Marshalling Yard Soest (2)

The marshalling yard is situated across the North border of the town, and has capacity for handling 4,400 wagons per 24 hours. It is an exceptionally busy yard, on one of the main routes to and from the Ruhr. Next to the route through Hamm from Berlin, the route through Soest between Breslau, Leipzig, Swindmünde, and the Ruhr probably handles the heaviest traffic in Germany. Soest is the main supply marshalling yard dealing with traffic to and from the Ruhr from Central and Eastern Germany and would bear the main weight of all the Ruhr traffic if Hamm were seriously damaged.

Railway Repair Shops Soest (3)

These repair shops, which are West of the marshalling yards, undertake the repair and maintenance of locomotives and other rolling stock, and employ some 1,500 workers.

Public Utility Services

The Möhne dam and hydro-electric power station Günne, near Soest (-)

The Möhne dam and its power station are situated 6 miles South-west of Soest and 25 miles East of Dortmund, at the North-west corner of the reservoir known as the Möhne Talsperre. The dam was built to improve the flow of the Ruhr by controlling water shortage in the Ruhr valley in the dry seasons, so that the pumping stations which provide/

SOEST (Westphalia) (Contd.)

provide water for the Ruhr industrial area and for the hydro-electric plants along the river may be supplied with water at all periods. The seven MW hydro-electric power station is operated by the Vereinigte Elektrizitätswerke Westfalen A.G. (VEW). It is situated immediately below the dam. In May, 1943, the dam was breached in an air attack, the power station was washed away, and the reservoir, which extended some 6 miles East and 3 miles South-east of the dam, was drained of its water.

Engineering and Armaments

Wilhelm Hagen Thomästr. (3)

The Accumulatorenfabrik Wilhelm Hagen have their works South of the railway marshalling yards and are believed to be making accumulators for submarines.

Merkur Niederbergheimerstr. (-)

The Glühlampenwerk Merkur G.m.b.H. are makers of electric light bulbs.

Grüte Grage Niederbergheimerstr. (3)

The Grüte Grage & Co.G.m.b.H. are iron founders and specialise in the manufacture of turntables and other railway equipment.

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SOLINGEN/

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SOLINGEN & DISTRICT (Rhineland)

51° 10' N. 7° 05' E: 312 miles: (153,600)

The Solingen district lies across the highland separating the Rhine and the Wupper valleys, and covers a total area of about thirty square miles. It includes the following towns and villages:-

(1) Solingen, with a population of 142,000 including Wald, Ohligs, Gräfrath and Höscheid.

(2) Haan, with a population of 11,600

Total 153,600

The city of Solingen itself lies 740 feet above sea-level in a bend of the river Wupper, about seven miles South of Wuppertal. It is connected by rail with the great industrial centres of the Ruhr, but is not in itself an important railway centre.

Solingen is known as "the Sheffield of Germany" on account of its world-famous light engineering industry which is mainly concerned with the production of cutting machines, tools, knives, scissors, and surgical instruments. Bicycles and components for motor vehicles and small arms are also manufactured.

The suburbs of the city - Wald to the North-west, Ohligs to the West, and Gräfrath to the North - are also industrialised, and some of the larger engineering plants are to be found in these areas.

The outlying settlements of the Solingen district are, for the most part, non-industrial, with the exception of Haan whose fair-sized engineering works were mainly engaged on the production of cutlery.

Transportation

Railway Junction & Marshalling Yard Solingen (3)

Of local importance only, serving the Solingen engineering industry.

Railway Junction & Marshalling Yard Ohligs (3)

Of local importance only, serving the engineering industry in this area.

Public Utility

Städtische Gaswerke Solingen (3)

The Municipal gasworks lie south of Solingen main passenger station adjoining the Zwillingwerk of J.A. Henckels. No gas is actually produced here, but the company purchased from the Ruhr gas grid (Ruhrgas A.G.) for resale about 785,000,000 cubic feet of gas in 1936.

Städtische/

SOLINGEN AND DISTRICT (Rhineland) (Contd.)

Städtische Gaswerke

Solingen-Ohligs (3)

This small municipal gas-works lies directly to the East of Ohligs marshalling yard and supplies gas to the suburb of Ohligs. Its activity is included in the above sales figure.

Engineering and Armaments

Kronprinz A. G. für Metallindustrie

Solingen-Ohligs (2)

A subsidiary of Mannesmannröhren-Werke A. G., Düsseldorf, this works lies North-east of Ohligs main station. It is important chiefly for its manufacture of components, particularly wheels, for motor-vehicles, aircraft, tanks, etc. Other production includes S. A. A., and steel tubes from 5 to 100 mm. in diameter. The number of workers employed is believed to exceed 4,000. It is also reported that in addition to the above, this firm is making undercarriages for Ju. 88's, 87's and Me. 210's, and other, mainly minor, aircraft components.

J. A. Henckels

Solingen (2)

There are two branches of this firm in Solingen. The larger of the two, which is known as the Zwillingswerk is situated South of and adjoining the Solingen main station and before the war manufactured special steels for cutlery, saws, scissors, etc., but is now stated to be producing S. A. A. and small-arms components, bayonets, and daggers. Several thousand workers are employed.

The smaller branch of the company in the suburb of Weyer, North-east of Ohligs, is engaged on the production of S. A. A., small-arms components, and precision parts for aircraft and instruments. The plant employs 1,500 workers.

Rudolf Rautenbach

Solingen-Mangerburg (1)

Covering a very closely built-up area of approximately 250 square yards, this firm's plant in Solingen-Mangerburg is considered to be the largest light-metal casting plant in Germany and even in 1933 was believed to be engaged on war production.

Aluminium and magnesium castings are produced here, particularly in the form of engine components such as crank-cases, air-cooled cylinder heads, oil-castings, cast pistons, and piston-rings. Junkers and B. M. W. absorb much of the engine-component output and the firm also supplies Messerschmitt with
undercarriage/

SOLINGEN & DISTRICT (Rhineland) (Contd)

undercarriage components and brake-drums for Messerschmitt aircraft of which it is the principal producer. The factory site includes a large experimental foundry and extensive research laboratories. More than 2,500 workers are believed to be employed.

W.K.C. Waffenfabrik G.m.b.H.

Solingen-Witkulle (-)

The firm is said to possess an underground plant in the suburb of Wittkulle, employing more than 1,000 workers on the production of armaments.

Patria W.K.C. Fahrradfabrik Solingen
Hans A., May

Solingen-
Obengöbnrath (-)

Manufacture of bicycles.

Solinger Fahrradfabrik F.H. Schaaf

Solingen (-)

Situated in the North-east of the city, this firm manufactures bicycles.

"Ariso" G. Arimont Söhne

Solingen-Heidburg (-)

Manufacture of bicycles.

Metallwerke Ohligs G.m.b.H.
(Controlled by Kronprinz A.G.)

Solingen-Ohligs (3)

Motor-vehicle and bicycle components are manufactured at this factory, which is a subsidiary of the Mannesmannröhren-Werke, A.G., Düsseldorf.

Oswald Forst G.m.b.H.

Solingen (3)

This factory is situated North of Meisenburg, and is engaged on the production of machine tools. It is believed to employ some 400 workers.

C.Grossmann, Eisen- u. Stahlwerk A.G.

Solingen-Witkulle (3)

In the suburb of Witkulle, this factory produces malleable iron castings, grey cast iron, steel castings, axle bearings, etc.

F.Klopp G.m.b.H. Maschinenfabrik, Sonderwerk
für Schnellhobler

Solingen-Wald (3)

Planing machinery is the main production of this factory, which is situated at Wald-Itterberg. 500 workers are believed to be employed.

F.W.Beckmann/

SOLINGEN AND DISTRICT (Rhineland) (Contd.)

F.W. Beckmann, Solinger Schleif- u. Polier- Solingen (3)
Artikel Fabrik G.m.b.H.

Lying due North-east of the Solingen main station, this factory produces precision machine tools and grinding and polishing machinery. It occupies an area of 5,400 square metres on a site of 13,000 square metres.

Brangs & Röhl Maschinenfabrik Solingen (-)

This works lies South of the Solingen main station and manufactures grinding and polishing machinery for the cutlery industry.

Th. Kieserling & Albrecht Solingen (-)
Maschinenfabrik- u. Eisengiesserei

Saws, shears, rolling-mill equipment for the metal industry, drop stamps, and spring swaging hammers are produced at this factory.

Chemicals and Explosives

Durofol K.G., J. Brangs & Co. Solingen (-)

This works lies West of the Zwillingswerk and the main Solingen passenger station. It manufactures plastics.

Textiles, Rayon, Pulp and Paper

Ohligser Leinen -und Baumwoll-weberei A.G. Solingen-Ohligs (-)

In 1938 this firm employed 320 workers on the production of webbing for driving belts, fitter cloth, etc.

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SÖMMERDA

SÖMMERDA (Province Saxony)

51° 10' N. 11° 10' E: 485 miles: (15,000)

Sömmërda lies 15 miles North of Erfurt on a branch railway line leading from Sangerhausen to Erfurt. In addition to the important branch works of the Rheinmetall-Borsig, the manufacture of small arms and ammunition is, even in peacetime, an established industry in Sömmërda which has been greatly extended during the war.

Engineering and Armaments

Rheinmetall-Borsig Sömmërda (2)

The Sömmërda factory of this concern in peacetime made typewriters and calculating machines, of which Rheinmetall was a large producer. Motorcar driving shafts and other components were also made. The plant is now making bomb components, principally light-alloy parts, fuzes, incendiary bomb casings, delayed action mechanisms, and electrical components. One section of the works is making leaf springs and transmission shafts for tanks. Over 3,000 workers are believed to be employed.

Selve Kronbiegel Sömmërda (2)

The Selve Kronbiegel-Dornheim A. G. were prior to the war manufacturers of detonators and sporting ammunition. They are now important makers of S. A. A. and are believed to have increased the number of their workers from 900, which was their peacetime complement, to over 3,000. The company, which originated in Altena, acquired the munition firms Braun & Bloem of Düsseldorf and Dreyse & Collenbusch of Sömmërda, and in 1925 transferred their headquarters and the whole of their production to Sömmërda.

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SOMMERFELD (Brandenburg)

51° 45' N. 15° E: 640 miles: (11,000)

Sommerfeld is in South-eastern Brandenburg on the railway from Frankfurt/Oder to Breslau. It is the junction for two minor branch railway lines. Industry is mainly textiles and is in the hands of several small firms. There are also two large brick and tile manufacturers. It has been reported that in the latter part of 1943 the Telefunken Radio concern of Berlin had transferred some of their departments to Sommerfeld and had converted one of the textile factories for this purpose.

Transportation/

SOMMERFELD (Brandenburg) (Contd.)

Transportation

Railway Repair Shops Sommerfeld (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

Textiles, Rayon, Pulp and Paper

Tuchfabrik Stüdstr. (-)

The Tuchfabrik A.G. vorm. Fischer Schnabel A.G. are manufacturers of cloth for civil and military requirements. Their weaving mill had 96 weaving stools before the war, when some 400 workers were employed. They are an example of several small textile factories in Sommerfeld.

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SONNEBERG (Thuringia)

50° 20' N. 11° 10' E: 500 miles: (20,000)

Sonneberg is on the Southern edge of the Thüringer Wald, 10 miles North-east of Coburg. It is a tourist resort for visitors to the Thuringian hills, and is regarded as the centre of the manufacture of dolls and childrens toys in which, in peacetime, a large trade is done, both inside Germany and for export. There is a great number of firms which are normally engaged in this industry. A woodworking firm in Sonneberg is mentioned below under Aircraft and Aero Engines.

Aircraft and Aero Engines

Hartwig Sonneberg (-)

The firm of Robert Hartwig, normally a woodworking and furniture-making factory, was reported in 1942 to be constructing gliders.

Engineering and Armaments

Siemens-Schuckert A.G. Sonneberg (3)

This small factory makes cartridge detonators, and a small variety of minor electrical appliances.

-----oOo-----

SONNENBURG (Brandenburg)

52° 35' N. 14° 50' E: 635 miles: (4,000)

Sonnenburg is 7 miles East of Küstrin on a branch railway line. It is on the southern edge of the wide stretch of marshland formed by the River Warthe near to its junction with the Oder at Küstrin. Normally the industries are on a small scale and chiefly devoted to woodworking, including the manufacture of clogs.

Engineering/

SONNENBURG (Brandenburg) (Contd.)

Engineering and Armaments

Ammunition Factory

Sonnenburg (-)

Ground reports suggest that in the woods near Sonnenburg there is a large explosives dump and shell-filling factory, reported to employ some 1,600 workers in 1942. The factory was accommodated in temporary buildings pending construction of a new plant. Railway sidings lead through the woods to the bunkers. The whole process of shell-filling and assembly is carried out here for calibres ranging from 21 cm. artillery shells to S.A.A. A proportion of the labour consists of Russian men and women.

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SORAU (Brandenburg)

51° 40' N. 15° 10' E: 655 miles: (24,000)

Sorau is in the extreme South-east of the Province of Brandenburg on the main railway line from Cottbus to Glogau and Breslau. A branch line leads from Sorau Southwards to Görlitz. The peacetime industry is mainly in the hands of a number of medium-sized textile factories, but Sorau is one of the localities in Eastern Germany to which a proportion of the aircraft production of the Focke-Wulf concern of Bremen has been transferred.

Aircraft and Aero Engines

Focke-Wulf

Sorau (2)

The Focke-Wulf aircraft assembly plant at Sorau is one of the last of this firm's newly-erected plants to come into production. It is believed that the works is exclusively engaged on the assembly of FW-190's and that components are imported from Cottbus and Posen. Minor components are manufactured at Sorau in six small factories at least two of which were formerly textile mills.

Textiles, Rayon, Pulp and Paper

Mechanische Weberei

Friebuserstr. (-)

The Mechanische Weberei Sorau vorm. F.A. Martin & Co. A.G. have a cotton and linen weaving mill which employed some 600 workers before the war. This is one of several medium-sized weaving mills in Sorau.

Hoffmann

Sorau (-)

The Erdmann Hoffmann A.G. are cloth manufacturers who employed some 300 workers before the war.

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SPEYER/

SPEYER (Bavaria)

49° 20' N. 8° 25' E: 410 miles: (28,000)

Speyer is in the Bavarian Palatinate on the left bank of the Rhine 10 miles South of Ludwigshafen. Apart from the aircraft factory described below, the industries include cotton spinning, boot and shoe manufacture, and brick and tile making. Speyer is one of the centres of the Palatinate wine trade, and there are also a large number of cigar and tobacco factories. The inland harbour and a small shipbuilding yard are mentioned below.

Transportation

Inland Harbour Speyer (-)

The inland harbour of Speyer was extended and reconstructed in 1924 and is well equipped with loading and storage facilities.

Aircraft and Aero Engines

Saarpfalz G. m. b. H. Speyer (2)

The Flugzeugwerke Saarpfalz G. m. b. H. were, prior to the war, engaged on the assembly of Klemm 35B trainer aircraft. The share capital of this company was increased in 1941 from 40,000 to 1,000,000 Reichsmark. The plant has been extended during the war and since 1940 it has been engaged on repair to Messerschmitt fighters. Some 1,500 workers are believed to be employed.

Shipbuilding

Josef Braun Speyer (-)

This shipbuilding firm, which normally builds barges and river craft on a small scale, is now reported to be constructing E-boats.

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SPREMBERG (Brandenburg)

51° 30' N. 14° 25' E: 625 miles: (14,000)

Spremburg in the Niederlausitz is in the extreme South of Brandenburg close to the border of Lower Silesia. It is on the right bank of the River Spree, and on a branch railway which runs from Cottbus, 10 miles to the North, to Görlitz. The chief importance of the town is due to its chemical factories. The large electric power station at Trattendorf lies 2 miles South of Spremburg. Cloth manufacture is represented by a number of factories which are individually on a small scale but in the aggregate provide a considerable output of textile goods.

Public/

SPREMBERG (Brandenburg) (Contd.)

Public Utility Services

Power Station

Trattendorf (2)

This thermal power station, situated 2 miles South of Spremberg, is owned by Elektrowerke A.G. It has an installed capacity of 196 MW. The station was rebuilt in 1921 and forms, with the large Lauta station 13 miles to the South-west, the nucleus of a group of power stations known as the Niederlausitzer Kraftwerks-Gruppe. The Trattendorf station is adjacent to the calcium carbide works of the Lonza Elektrochemische Fabriken G.m.b.H., referred to below under Chemicals and Explosives. Fuel is obtained from the brown-coal mines in this area.

A medium-voltage and 100-kV substation is attached to the station. Medium-voltage supplies are given to the adjacent works, to the towns of Spremberg nearby, Cottbus, 15 miles to the North, to the district of Hoyerswerde, 10 miles to the South, and to the medium-voltage grid of the Elektrowerke.

Five double-circuit 100-kV lines connect to Breslau, Berlin-Spandau, Berlin-Friedrichsfelde, Guben, and Lauta respectively.

Chemicals and Explosives

Lonzawerke

Trattendorf (3)

The Lonzawerke Elektrochemische Fabriken G.m.b.H. have a carbide plant near the electric power station at Trattendorf, 2 miles South of Spremberg, which, together with this firm's Waldshut factory, has a capacity of 100,000 tons of carbide per annum.

H. Römmler A.G.

Spremberg (3)

The H. Römmler A.G. are owned by the Brown Boveri & Co., A.G. of Mannheim and are manufacturers of plastics. They are among the leading German producers of tar-acid and urea resins. Before the war approximately 1,000 workers were employed at the Spremberg plant.

Textiles/

SPREMBERG (Brandenburg) (Contd)

Textiles, Rayon, Pulp and Paper

Carl Müller	Spremberg)	
Fr. W. Heinze G.m.b.H.	Spremberg)	(-)
Georg Wissinger	Spremberg)	

The above are medium-sized cloth factories given as examples of ten similar mills in Spremberg.

-----oO-----

STADE (Hanover)

53° 35' N. 9° 30' E: 430 miles: (15,000)

Stade is 25 miles West of Hamburg on the railway to Cuxhaven. It is on the Western side of the Elbe, 4 miles distant from the river bank. A leather tannery and a rubber factory are mentioned below, and there are several small-scale industries, including oil-refining, hemp and wool spinning, and the manufacture of wooden pulley blocks.

Rubber and Tyres

Gebr. Schmidt	Stade	(-)
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This factory makes various rubber goods, particularly insulated coverings for the cable industry, and is also believed to make bicycle tyres.

Leather

Lederfabrik	Kommandantentrich(-)
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The Stader Lederfabrik A.G. employed some 500 workers and had a well-equipped tannery with a pre-war capacity for 1,000 skins per day. They manufactured sole leather and are known to have achieved a good scale of production of russet leather as used by the armed forces.

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STADELN (Bavaria)

49° 30' N. 11° E: 505 miles: (1,200).

Stadeln is 3 miles North of Fürth near to the railway station of Vach on the line from Nürnberg to Erlangen. Its only importance is due to the Chemical Works mentioned below.

Chemicals/

STADELN (Bavaria) (Contd.)

Chemicals and Explosives

Dynamit A. G.

Stadeln (3)

This factory is operated by Dynamit A. G., and was formerly owned by the Rheinisch-Westfälische Sprengstoff A. G.

Pre-war reports do not suggest that the factory was of great size, although a large area of ground was reserved for it. A report dated 1938 states that while over 400,000 square metres of land were allocated to the factory, only some 22,000 square metres had been used for buildings at that time.

Photographic reconnaissance of July, 1942, shows that the factory has now been much enlarged. Its chief function is plainly the manufacture of T.N.T., and it is estimated on the basis of size of buildings that its output would be at least 20,000 tons per annum. It seems likely that penthrite or tetryl are also made at this factory, and there are certain buildings similar to those usually associated with the manufacture of detonators.

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STARGARD (Pomerania)

53° 20' N. 15° E: 650 miles: (41,000)

Stargard is 23 miles East of Stettin and is a railway junction of some importance to the traffic between Stettin and Eastern Germany. To the West of Stargard is the Madü See on which there is now a seaplane base. Apart from the large railway repair shops mentioned below there are no industries of importance in Stargard. Stargard in Pomerania must not be confused with Starogard (or Preussisch-Stargard) which is in the Polish Corridor 20 miles West of Marienburg.

Transportation

Railway Junction

Stargard (3)

The railway line, which runs from Stettin parallel with the Baltic coast through Belgard and Stolp to Danzig, passes through Stargard. A second line diverges at Stargard and leads South-east to join the main Berlin-Danzig line at Kreuz in the Polish Corridor. A further branch line leads South-west from Stargard to Peyritz.

Railway Repair Shops

Stargard (3)

These are large repair shops which undertake the repair of locomotives and rolling stock, and employ some 1,900 workers.

Aircraft/

STARGARD (Pomerania) (Contd.)

Aircraft and Aero Engines

Seaplane Base

Madü See (3)

The Madü Lake is 4 miles West of Stargard and is some 8 miles in length. At the North-eastern end of the lake are the hangars and hutments of a seaplane base which uses this lake as an alighting zone.

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STASSFURT (Province Saxony)

51° 50' N. 11° 35' E: 505 miles: (16,000)

Stassfurt is 5 miles North-west of Bernburg and is the centre of an important salt-mining district. The Stassfurt saline deposits are the best known in the world for the supply of potassium salts; not only mines, however, but potash refineries exist in profusion in the area, each of the four or five chief producing companies having two or more factories for the production of potash fertilizers and refined potash salts. The important Junkers aircraft components factory at Stassfurt forms one of the chain of Junkers plants which are grouped in this part of Germany. The remaining industries of Stassfurt are not of particular importance.

Aircraft and Aero Engines

Junkers Flugzeug- & Motorenwerke

Leopoldshall (2)

This Junkers aircraft components works is in Leopoldshall, which is immediately South-west of Stassfurt proper and is now part of the same municipality. The works employs several thousand workers and makes major components and in particular control surfaces. The output of this works is supplied to the large Junkers final assembly plant at Bernburg, 5 miles to the South-east which also obtains components from Aschersleben (8 miles to the South-west), Schönebeck (15 miles to the North-east), Halberstadt, Oschersleben, and Köthen. Dessau, where the parent works of Junkers is situated, lies 30 miles East of Stassfurt.

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STENDAL

STENDAL (Province Saxony)

52° 35' N. 11° 50' E: 515 miles: (32,000)

Stendal is 60 miles West of Berlin on the main line from Berlin to Hanover. It is an important railway junction with large marshalling yards and repair shops. Apart from the engineering and metal working firms mentioned below, the industry is chiefly fruit-preserving and sugar-refining. Stendal is also the centre of a large agricultural area.

Transportation

Railway Junction Stendal (2)

Stendal is on the main East to West line from Berlin through Hanover to the Rhineland and to Holland. The lines from Stendal to Wittenberge, (on the Berlin-Hamburg route) 28 miles North of Stendal, and to Magdeburg, 30 miles to the South, form an important direct route between Magdeburg and Hamburg. A further branch diverges at Stendal north-eastward from the Berlin-Hanover line and leads via Ulzen to Bremen and Hamburg. A branch line connects Stendal with Tangermünde on the Elbe, 7 miles to the South-east, and two minor branch lines serve the districts to the North-west and North-east.

Marshalling Yards Stendal (2)

The Stendal marshalling yards have a capacity for 4,500 wagons per 24 hours.

Railway Repair Shops Stendal (3)

These repair shops undertake the repair of locomotives and goods wagons.

Engineering and Armaments

L. & C. Arnold Arnoldstr. (-)

L. & C. Arnold are normally makers of iron furniture, and in peacetime had a large production of chairs and tables which were used in outdoor cafes and gardens. They are now believed to be engaged on the production of armaments.

Wilhelm Schreiber Nikolaistr. (-)

This firm manufactures agricultural machinery and implements and woodworking machinery.

Sachsenwerk G.m.b.H. Am Ostbahnhof (3)

The Sächsische Eisenbahnbedarf & Maschinenfabrik G.m.b.H. Stendal are makers of railway equipment.

Chemicals/

STENDAL (Province Saxony) (Contd)

Chemicals & Explosives

Dynamit A.G.

Klietz

(3)

Near the small settlement of Klietz 10 miles to the North-east of Stendal is a plant which is reported to be under the control of a subsidiary of I.G. Farben (probably Dynamit A.G.). Its construction began some time about 1936, and it has been constantly expanded since. The layout of the plant is so different from British practice that it is somewhat difficult to interpret, but it seems almost certainly to be engaged in the manufacture of propellant explosives, and probably also of finished powder. Nitrocellulose and diglycoldinitrate manufacture appear to take place, but estimates of capacity are difficult to make. At a rough estimate, the factory should be capable of producing up to 20,000 tons of nitrocellulose, and between 5,000 and 10,000 tons of diglycoldinitrate annually.

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STETTIN (Pomerania)

53° 25' N. 14° 35' E: 630 miles: (380,000)

Stettin is at the mouth of the River Oder and is Germany's largest Baltic port. It is the nearest port to Berlin, which lies 84 miles to the South-west. It has direct rail communications with Berlin, Frankfurt (Oder), and Danzig, and through the River Oder is joined up to the main North German inland-waterway system. It plays an important part in the seaborne supply arrangements for the Eastern Front.

The central area of Stettin is a compact mass composed mainly of dwelling houses and offices. The industrial area extends along the river from the dock area in the south-eastern quarter of the city northwards along the left bank to Gutzkow. Most of the important industrial plants are in this area.

The main industry of Stettin is connected with its shipyards. No large vessels are built here, but there is considerable activity in the building and fitting-out of submarines, minesweepers, naval escort vessels, and tank landing craft. The shipyard area is in the neighbourhood of Grabow, which is on the left bank of the river one mile to the North of the main railway bridge. The Vulkan shipyards have been considerably extended during the war. Opposite the shipbuilding yards is the Bredow Werder, a large island in the channel of the Oder, which is in process of being converted into an industrial area and naval base. At the South end of this island a large dock basin has been excavated. The port or dock area is on the right bank of the Oder immediately North of the marshalling yards, and in the neighbourhood of the docks is a large concentration of warehouses, timber yards, oil depots, and small factories.

In/

STETTIN (Pomerania) (Contd.)

In Pommerensdorf, a southern suburb of Stettin, there are chemical works and a large electric power station, which are described below.

An important factory lying outside the general industrial area is the Stoewer Werke A.G., which is situated to the West of the town in the suburb of Westend.

The outlying district of Pöhlitz, 8 miles to the North of Stettin, contains an important synthetic-oil plant and an electric generating station. These are included with Stettin in the list below.

The town of Altdamm, which lies to the South-east of Stettin, is dealt with separately.

Transportation

Port Area Stettin (2)

The port and dock area are opposite the centre of the town on the right bank of the Oder. There are two harbours with rail sidings which lead from the marshalling yards immediately to the South East. The Freihafen, one of the docks immediately opposite to the city centre, has some of the largest dock warehouses in Europe, including a large grain elevator. The whole dock area, including the island known as the Silber-Wiese, at the point where the main railway crosses the Oder, is closely built with warehouses, timber yards, saw mills, oil storage depots, and small factories.

Stettin is an important transshipment centre for the Upper Silesian coal which is conveyed in barges down the Oder direct from the coalfields.

Railway Centre Stettin (2)

The main line from Berlin, which continues beyond Stettin north-eastwards parallel with the Baltic coast, forms a direct route from Berlin to Danzig. Other lines radiate from Stettin north-westwards to Stralsund, southwards to Küstrin, and northwards via Gollnow round the Eastern side of the Stettiner Haff to Swinemünde. Three other minor branch lines serve the agricultural districts to the West and South-west of the town.

Marshalling Yards Stettin (3)

The marshalling yard has a capacity for handling 2,500 wagons per 24 hours. It is connected with the chief goods station which handles traffic arriving on the Oder for despatch to Berlin, and goods from Berlin and Breslau for shipment to the Baltic ports. It is also the clearing station for the eastern coastal districts of the Baltic.

Public/

STETTIN (Pomerania) (Contd.)

Public Utility Services

Power Station Pommerensdorf (1)

The Oderkraftwerk thermal power station is owned by Märkisches Elektrizitätswerk A.G. (MEW) and has an installed capacity of 200 MW. It is situated in the Southern suburbs of Stettin, near the left bank of the Western branch of the Oder. The station is unique in its construction. Built shortly before the during the war, it is designed to afford the greatest possible concealment and protection against air attack and is built into the edge of a cliff with part of the plant underground. The open-air switching station is situated about 100 yards to the West; several overhead lines are connected to it and though their routes are not known it is assumed that one at least connects to Stettin.

Power Station Altdammerstrasse (2)

This thermal power station is situated in the S-E suburbs of Stettin on the river Parnitz, a tributary of the Oder; it is owned by the Grosskraftwerk Stettin A.G. (controlled by the Stettin Corporation), and has an installed capacity of 91 MW. Stettin and district receive electricity supplies mainly from this station via the transmission system of the Märkisches Elektrizitätswerk (MEW), which owns several generating stations in this area including the Oderkraftwerk at Pommerensdorf. Districts supplied include Greifenhagen, 12 miles South; Prenzlau, 30 miles West; and the district round the river Randow, 16 miles North.

An open-air substation connects the station to the 100 kV transmission system. Lines at this voltage are believed to connect to Pasewalk, Stargard, the Oderkraftwerk, and Pölitz.

Power Stations Pölitz (1)

The two thermal power stations, Pölitz I and II, form part of the synthetic-oil plant situated about 8 miles North of Stettin; they belong to the Hydrierwerke Pölitz A.G. and have a combined installed capacity of 300 MW. Pölitz I, the most southerly, has an installed capacity of 225 MW; Pölitz II, 250 yards to the North, was completed in 1943 and has an installed capacity of 75 MW. The estimated requirements of the synthetic-oil plant are 300 MW, with an annual consumption of about 2 million kWh; these are supplied by medium and low voltage underground cables. Steam is also supplied to the plant.

A large open-air substation is situated in the Western area of the works, to which at least 2 high-voltage overhead lines are connected; one of these probably connects to Stettin, and the other to Steinstrasse.

Gasworks/

STETTIN (Pomerania) (Contd)

Gasworks

Stettin (3)

The municipal gasworks I are situated to the S. of the town near the left bank of the R. Oder, on the main Berlin railway line. Gas is bought from the coking plant of the Hochofenwerk Lübeck A.G. at Kratzwiek, but most of the supplies are made in the ordinary way. In 1936, sales were 800 mill. cu. ft., of which 260 million were purchased. Gasworks II are adjoining the Zabelsdorf Railway Station to the N. of the town.

Solid Fuels

Hedwigshütte

Gotzlow (3)

The Hedwigshütte Kohlen- & Kokswerke A.G. has a large briquetting plant at Gotzlow on the left bank of the Oder, 4 miles North-east of Stettin. These works, which have their own quay and loading facilities, employed some 900 workers before the war.

Hochofenwerk

Kratzwiek (3)

The coking plant of the Hochofenwerk Lübeck A.G. at Kratzwiek (see also below under Iron & Steel) has 162 ovens and an annual rated dry coal capacity of 400,000 tons.

Liquid Fuels and Substitutes

Hydrierwerk

Pölitz (1)

This important synthetic-oil plant belonging to the Hydrierwerk Politz A.G. covers an area of approximately three-quarters of a square mile. The Bergius process is used, and the Pölitz plant has an estimated annual capacity of 600,000 tons of oil. The plant has its own power supply, which is described above under Public Utilities. Construction of the Pölitz oil plant began in 1938 and oil production commenced in 1940. The plant was working to its full capacity for the first time in 1943.

Oil Storage

Stettin (3)

There are several oil-storage installations in the dock area and on the bank of the River Parnitz. These are estimated to have a storage capacity of approximately 100,000 tons in total.

Iron/

STETTIN (Pomerania) (Contd.)

Iron and Steel and Ferro Alloys

Hochofenwerk

Kratzwieck (2)

The Hochofenwerk Lübeck A.G., the parent works of which are in Lübeck, have a branch works in the suburb of Kratzwieck, 4 miles North of Stettin, on the left bank of the Oder. The Kratzwieck plant comprises iron and steel works, a copper refinery, and a coking plant with 162 ovens. The iron and steel works have an annual capacity of 150,000 tons of pigiron, and the copper refinery of 3,000 tons of copper per annum.

Aircraft and Aero Engines

Stoewer Werke

Falkenwalderstr.(-)

A section of the Stoewer Werke A.G., which is described below under Engineering and Armaments, is reported to be building aero-engines of the Jumo 211 type. The report has so far remained unconfirmed.

Shipbuilding

Stettiner Oderwerke A.G. für Schiff u.
Maschinenbau

Grabow (1)

These important constructional engineering and submarine building works are situated on the left bank of the Oder one mile North of the town, at the south end of the important group of shipbuilding yards and engineering works which include the Vulkan yards and Gollnow works. The firm has been engaged on the building of M-class minesweepers and repair and maintenance work on other naval units since the war. Submarine building was begun late in 1941 when one of 500 tons was laid down; the building of these U-boats was carried on in 4 open slips, the U-boats being concealed in camouflaged cradles. Other shipbuilding equipment consists of extensive workshops, 6 floating docks weighing from 700 to 3,000 tons, two floating cranes, ferry installations for the production of ocean and river craft, passenger and cargo vessels, up to 4,500 tons, ice breakers, and tugs. Steel castings, forgings, and boilers are also produced. Some 5,000 workers are employed.

Stettiner/

STETTIN (Pomerania) (Contd)

Stettiner Vulkan-Werft A. G.

Bredow

(2)

The shipbuilding yards of these works lie directly north of and adjoining the Stettiner Oderwerke, in the centre of the important shipbuilding and engineering group on the left bank of the Oder. The yards were closed by the Versailles Treaty and reopened in 1938. Submarine building began in 1942. 500-ton submarines were constructed in 4 open slips, concealed in camouflage cradles. There are 11 slipways, from 90 to 680 ft. in length, not all of which are in use. There are 2 floating docks of 150 ft. and 520 ft. in length. The yards also build and fit out seagoing and river craft, merchant vessels up to 17,000 tons, icebreakers, floating docks, tank landing craft.

Merkurwerft, G.m.b.H.

Grabow

(3)

The former Merkurwerft G.m.b.H. which adjoins the Stettiner Oderwerke to the south is now a naval dockyard and is used for the fitting out of naval vessels.

Engineering and Armaments

Gollnow & Sohn

Stettin
Zullchow

(2)

J. Gollnow & Sohn are metal construction engineers with an output in peacetime of 2,200 tons of constructional steelwork per month. In 1938 a new department was opened for the construction of steel pylons. This firm had contracts for the reconstruction of steel bridges in Russia and Poland. Before the war grenade throwers were manufacture for the Wehrmacht. The production of these is believed to have been discontinued, but the firm is probably engaged on other types of armament manufacture. Some 3,000 workers are employed.

Frister & Rossmann A. G.

Stettin

(2)

This firm, which formerly manufactured sewing machines, went into liquidation some years before the war. A recent report states that their works have now reopened and are producing military bicycles and machine guns. Some 3,000 workers are said to be employed, the majority of whom are women. The firm is given under the above title as no details of the new owners are available.

Stoewer/

STETTIN (Pomerania) (Contd.)

Stoewer Werke

Falkenwalderstr. (2)

The important works of the Stoewer Werke A.G. are in the Western quarter of Stettin in the suburb of Westend. The factory is divided into two sections. The main plant produces motorcycles and A.F.V.'s. A subsidiary section, which is reported to be building aero-engines, is mentioned separately above. Some 3,000 workers were employed in these works before the war, but a recent report states that this figure has now been doubled.

Auto Union

Altdammerstr. (-)

The Auto Union A.G., the parent works of which are in Chemnitz, are reported to have established a large repair shop in Stettin, undertaking the repair of motor engines, tractors and armoured cars. The plant is believed to employ some 350 workers.

Chemicals and Explosives

Zellstoffwerke

Odermünde (2)

The Feldmühle Papier- & Zellstoffwerke A.G. have a factory at Odermünde, 6 miles North of Stettin, on the left bank of the River Oder. This factory employed some 3,000 workers before the war and manufactured alkali, sulphur trioxide, sulphuric acid, superphosphates and cellulose etc. It is estimated to have an annual capacity of 15,000 to 20,000 tons of alkali; 3,000 tons of sulphur trioxide, and 3,800 tons of sulphuric acid. The company has also a branch factory at Hohenkrug, 3 miles to the East of Altdamm, which used to employ some 400 workers.

Union

Kratzwieck

Union

Bredow Werde

} (3)

The Union Fabrik Chemischer Produkte has two plants in the Stettin area. The first is in the northern suburb of Kratzwieck, the second immediately opposite the ship-building yards of the Oderwerke, on the Bredow Werde an island in the River Oder. This company employed some 300 workers before the war, but this number is believed to have been greatly increased. The Kratzwieck plant alone is now estimated to have an annual capacity of 3,400 tons of sulphur trioxide and 4,000 tons of sulphuric acid.

Chemischen/

STETTIN (Pomerania) (Contd.)

Chemischen Fabriken A.G.

Pommerensdorf (3)

The chemical factory of the A.G. der Chemischen Produkten-Fabriken manufactures superphosphates, acids, and various types of fertilisers. In 1928 they had an annual capacity of over 20,000 tons of acid.

Food Stuffs

Grain Silo

Unterwieck (-)

On the left bank of the Oder, immediately opposite to the docks, there is a grain silo with a storage capacity of 43,000 tons.

Stettiner Oelwerke A.G.

Zülchow

} (-)

F. J. Stahlberg

Pommerensdorferstr. }

The above are two vegetable-oil crushing plants and refineries. The Stettiner Oelwerke has a capacity of 130,000 tons and Stahlberg 40,000 tons per annum. The Stahlberg plant employed some 300 workers before the war. The site of the Stettiner Oelwerke includes the plant of the Töpfer's Oelwerke and the annual capacity figure of 130,000 tons is for both works.

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STOCKSTADT (Bavaria)

50° N. 9° E: 420 miles: (3,000)

Stockstadt am Main is 4 miles West of Aschaffenburg. Apart from a rayon factory, there are no factories of individual importance.

Textiles, Rayon, Pulp and Paper

Zellstoffwerke

Stockstadt

(3)

The Aschaffenburg Zellstoffwerke A.G., the parent works of which are in Aschaffenburg, have a large factory in Stockstadt producing paper pulp and rayon pulp. This concern, which is also an important producer of cellulose for paper-making has since 1937 greatly extended its pulp for the manufacture of viscose rayons.

-----oO-----

STOLBERG/

STOLBERG (Rhineland)

50° 45' N. 6° 15' E: 280 miles: (30,000)

Stolberg lies 7 miles East of Aachen on a branch railway line which joins the main Cologne-Aachen line one mile North of the town. It is the centre of a zinc mining district, and the industries include zinc smelting and non-ferrous metal fabrication, and a chemical works. The principal factories are mentioned below.

Transportation

Railway Repair Shops Stolberg (3)

These are medium sized repair shops undertaking the repair of goods wagons.

Non-Ferrous Metal Manufacture and Fabrication

Stolberger Zink Münsterbusch (2)
Binsfeldhammer (2)
Birkengang (-)

The Stolberger Zink A.G. für Bergbau & Hüttenbetrieb, whose head office is in Aachen, own a number of zinc and lead mines in the Rhineland, and have their three principal smelting works close to Stolberg, at Münsterbusch, Binsfeldhammer and Birkengang. The Münsterbusch plant has a capacity of 30,000 tons of zinc, and the Binsfeldhammer plant a capacity of 42,000 tons of lead per annum. The capacity of the Birkengang plant is estimated at 16,000 tons of zinc per annum, but the plant is believed to be inactive. This concern employed some 6,000 workers before the war of whom some 4,000 worked at the Stolberg group of factories. There are chemical factories connected with these two plants, which are mentioned below.

Engineering and Armaments

Wilhelm Prym Zweifallerstr. (2)

The Wilhelm Prym company is an old established firm of brass and copper fabricators. The works include a foundry and rolling mills, and employed some 2,500 workers before the war when the principal products were brass and copper fittings and semi-finished products. The plant has been enlarged in the course of the war and is now engaged mainly on the production of ammunition and armaments components.

/Von Asten

STOLBERG (contd.)

Von Asten und Lynen G.m.b.H.

Stolberg (3)

This is a firm of copper and brass fabricators and brass founders which normally has a similar range of products to the firm of Wilhelm Prym mentioned above.

Chemicals and Explosives

Schwefelsäurefabrik

Münsterbusch (3)
Binsfeldhammer (3)

The Schwefelsäurefabrik Münsterbusch G.m.b.H. is owned by the Stolberger Zink A.G. (mentioned above under Non-Ferrous Metals). The chemical plants which are operated by this company and attached to the two Non-Ferrous Metal plants (mentioned above), produce sulphur trioxide and sulphuric acid. The estimated annual capacities of the two plants are: Münsterbusch- 35,000 tons of sulphur trioxide and 42,500 tons of sulphuric acid; Binsfeldhammer- 15,500 tons of sulphur trioxide and 19,000 tons of sulphuric acid.

Kali-Chemie

Stolberg (3)

The Kali-Chemie A.G. have a branch factory at Stolberg, producing soda ash.

-----oO-----

STOLP (Pomerania)

54° 30' N. 17° E: 745 miles: (48,000)

Stolp is 50 miles West of Danzig on the railway from Stettin to Danzig. It is a junction for many of the coastal settlements on this stretch of the Baltic. Stolp is principally the marketing centre for the surrounding agricultural district. It contains several firms producing agricultural machinery and equipment for the distilling industries. There are also a number of furniture factories.

Transportation

Railway Repair Shops Stolp (3)

These are small railway repair shops which undertake the repair of goods wagons and passenger coaches.

Engineering and Armaments

Gustav Denzer Stolp (-)

This firm manufactures agricultural machinery and equipment for the distilling industries. In peacetime some 150 workers are employed.

Vetzki Stolp (-)

The Maschinenfabrik Vetzki K.G. are makers of all kinds of agricultural tools and implements.

-----oO-----

STRALSUND (Pomerania)

54° 20' N. 13° 5' E: 585 miles: (53,000)

Stralsund is 85 miles North-west of Stettin on the coast of the Baltic opposite to the island of Rügen. It is chiefly an agricultural marketing centre for North-western Pomerania. There are also a number of factories specializing in the canning and preserving of fish. Stralsund is on the railway line leading to the train-ferry service to Sweden from the island of Rügen.

Transportation

Railway Centre Stralsund (3)

Three direct railway lines lead from Stralsund to Rostock, Neubrandenburg, and Stettin respectively. North-eastwards the railway crosses by means of a bridge to the island of Rügen and to Sassnitz, the terminus of a train ferry to Trelleborg, which forms an important link with Sweden.

Public/

STRALSUND
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STRALSUND (Pomerania) (Contd.)

Public Utility Services

Electric Power Station

Stralsund (3)

The municipal power station is of the thermal type and has a capacity of 30 MW.

-----oO-----

STRAUBING (Bavaria)

48° 55' N. 12° 35' E: 590 miles: (28,000)

Straubing is on the right bank of the Danube, 23 miles East of Regensburg, and is on the railway line from Regensburg to Passau and Austria. It is a market for the surrounding agricultural district. The industries, which include bricks and tiles, the manufacture of agricultural implements, and brewing, are not of outstanding importance.

-----oO-----

STRIEGAU (Silesia)

50° 55' N. 16° 20' E: 715 miles: (15,000)

Striegau is 20 miles South-east of Liegnitz on the railway from Liegnitz to Neisse and Upper Silesia. The principal activity of the town is connected with the granite quarries in this neighbourhood. The other industries, which are on a small scale, include hosiery, gloves, and furniture manufacture, and a few small engineering works chiefly making agricultural machinery and implements.

-----oO-----

STUTTGART/

STUTT GART (Württemberg)

48° 45' N. 9° 10' E: 450 miles: (600,000)

Stuttgart, the capital of Württemberg, is the most important industrial town in Southern Germany. It lies in a valley surrounded by wooded hills which open out in the East into the valley of the river Neckar. The town has grown in size considerably since the end of the last century, the development being due mainly to the engineering industry consisting principally of light and electrical engineering. Together with the adjoining suburb of Zuffenhausen, Feuerbach forms one of the chief industrialised quarters of the Stuttgart district. The second industrial area is in Cannstatt and Münster, which are to the North of the city centre and on the left bank of the river Neckar. This area includes an important ball-bearing works, the town's electric power station, and several precision-engineering works. A third industrial district is East of the city centre and on the right bank of the river, extending Southeastward from Untertürkheim up the river valley to Esslingen. The highly important main plant of the Daimler-Benz concern is in Untertürkheim, which also contains large marshalling yards and railway-repair shops. Halfway between Untertürkheim and Esslingen are the "Index" works of Hahn & Tessky, one of Germany's leading makers of machine tools. The manufacture of machine tools and measuring instruments is a highly-developed industry in Stuttgart and also in the neighbouring settlements of Esslingen, 4 miles to the South-east. It is characteristic of Stuttgart, as indeed of the whole of Württemberg, that in normal times industry tends to remain in the hands of a large number of medium-sized or small firms. This is particularly the case with machine tools, and it is, therefore, not possible to include all the numerous firms which in the aggregate make Stuttgart a vital factor in the German engineering industry.

Stuttgart is an important railway centre and is on the main routes from the North to Zurich and from Munich to Karlsruhe and France.

Transportation

Railway Centre	Stuttgart	(2)
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The main railway station is situated in the centre of the town and is one of the largest terminal railway stations in Germany. Stuttgart lies on two important trunk routes, from North Germany to Zurich, and from Munich to Karlsruhe and France. Two branch lines lead East and West to Schwäbisch-Gmünd and Böblingen respectively, and several minor branches serve the neighbouring industrial settlements, including Sindelfingen, Kornwestheim and Ludwigsburg.

Marshalling Yards	Untertürkheim	(3)
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These marshalling yards are capable of handling up to 2,200 wagons per 24 hours.

Goods Yards	Stuttgart	(3)
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The principal goods yards occupy a large area to the North-east of the main railway station and have extensive storage facilities.

/Goods Yards

STUTTGART (contd.)

Goods Yards Bad Cannstatt (3)

Extensive goods yards lie on the Western side of the large railway-repair shops South of the suburban station of Bad Cannstatt on the right bank of the Neckar.

Railway Repair Shops Stuttgart (2)

There are railway-repair shops at Bad Cannstatt and Stuttgart-Nord. At Bad Cannstatt the repair of all kinds of rolling stock, including passenger coaches, is undertaken, and at Stuttgart-Nord the repair of goods wagons. Some 2,000 workers are employed in Bad Cannstatt and 500 in Stuttgart-Nord repair shops alone. In addition to the above there are also repair shops employing some 900 workers at Esslingen.

Public Utility Services

Power Station Stuttgart (2)

This thermal power station is situated in Münster, a northern suburb of Cannstatt. It is owned by the Stuttgart Corporation and has an installed capacity of 87 MW. In addition to the general town supply, power is delivered for railway traction. There are no important long-distance supplies. An adjacent 6/110 kV substation is owned by Elektrizitäts-Versorgung Württemberg A.G. and provides supplies for traction locally and via a 110-kV transmission line through Flochingen to Pasing to serve the electrified Stuttgart-Ulm-Augsburg-Munich railway line (single-phase circuit). A substation for 3/10 kV transmits supplies locally. Medium-voltage lines connect to Degerloch and Obertürkheim.

Power Station Marbach (2)

The Marbach plant consists of a large thermal station, begun in 1938 and completed since the outbreak of war, and a small hydro station, and has an installed capacity of 108 MW. It is situated on the river Neckar about 10 miles North of Stuttgart and this relatively remote location was probably chosen mainly as an air-raid precaution. It is believed that practically the whole electrical output is supplied to the grid at the 220-kV Hoheneck substation and the 110-kV Obertürkheim substation from whence a part is transmitted to Stuttgart. The small hydro station has an installed capacity of 3 MW. An outdoor substation contains 4 double-circuit 110-kV lines, of which one, possibly two, connects to Obertürkheim and two to Hoheneck.
/Substation

STUTTGART (contd.)

Substation Hoheneck (2)

This important substation is situated 2 miles South-west of the Marbach generating station. It is being extended and identification is therefore uncertain. The station is on the 220-kV (planned 380-kV) long-distance line which links the water-power stations of the mountainous regions on the southern frontiers of Germany with the Ruhr industrial area.

There are three adjoining sections for 220 kV, 110 kV and 60 kV respectively. Each section has duplicate busbars.

Two 380/220-kV circuits connect to Rheinau and two to Herbertingen.

One 220-kV circuit connects to Ellwangen. Two (possibly) 110-kV circuits connect to Pforzheim and two (possibly) to Heilbronn. Two double 110-kV circuits are under construction to Marbach station.

Two 60-kV circuits go to Heilbronn, two to Fleidesheim, and one to Enzberg.

It is believed that there are transformers for voltages lower than 60 kV.

Gas Works Stuttgart (3)

The municipal gas works made 3,100 million cubic feet of gas in 1936. Supplies are given to a large number of localities around Stuttgart.

Non-Ferrous Metal Manufacture and Fabrication

Leichtmetallbau G.m.b.H. Feuerbach (3)
Siemensstr.

The Leichtmetallbau G.m.b.H. manufacture fuel and oil containers, pilot's seats, and other light-metal components and accessories for aircraft.

Heinrich Ritter Esslingen (3)
Ulmerstr.

Before the war this firm manufactured a variety of light-metal products. It is now engaged on the manufacture of light-metal aircraft components of unspecified type, but is believed to supply the Messerschmitt and Focke-Wulf companies.

Gebrüder Heller Maschinenfabrik Nürtingen (3)

The factory is reported to be producing hand drills ranging from 1 mm. to 10 cm. in diameter, automatic lathes of a new model used for the manufacture of shells and aerial bombs, planing machines, circular saws, emery grinding molds, milling machines, and hydraulic units for other machine tools were also produced. About 400 workers are believed to be employed.

/Aircraft

STUTTGART (contd.)

Aircraft and Aero-Engines

Albert Hirth A.G.

Zuffenhausen

(3)

The Zuffenhausen works of this company is mainly engaged on experimental work, which is carried out on behalf of its holding company, the Heinkel aircraft concern. The research and experimental work is chiefly connected with the development of low-powered aero-engines, aero-engine components, and, in particular, crankshafts.

The Hirth Motoren G.m.b.H. occupies the same site, and works in close co-operation with the above firm. The ground reports suggest that since early 1940 approximately 1,000 workers have been employed at the Zuffenhausen factory, and there are indications that, in addition to research and experimental work, a small range of aero-engine components manufactured here.

Elektronmetall G.m.b.H.

Bad Cannstatt

(3)

This firm specialises in the manufacture of pistons and piston rings, brakes, and shock absorbers for the aircraft industry. Other products include light-metal components for aircraft instruments, particularly radio equipment.

Leichtmetallbau G.m.b.H.

Bad Cannstatt

(3)

It is believed that this firm employs 3/400 workers on the manufacture of aircraft components, in particular shock absorbers and components for aircraft undercarriages, brakes, and other aircraft equipment.

J.Eberspächer

Esslingen

(3)

This factory has been considerably enlarged since 1939, and has acquired at least one of the neighbouring factory sites, apart from erecting two new workshops adjacent to its old premises. It is believed to be engaged mainly on the manufacture of aircraft components and cylinder-baffling silencers, air filters, and other aero-engine components. Other products of the firm are components for flame throwers, and reports suggest that a number of other firms in Esslingen supply Eberspächer with major and minor components for flame throwers, indicating that assembly of flame throwers is likely to be undertaken by them.

/Daimler-Benz

STUTTGART (contd.)

Daimler-Benz A.G.

Untertürkheim

(1)

The principal pre-war activity of this company was the manufacture of motor vehicles, and it is believed that the major part of the very extensive old Daimler-Benz works at Untertürkheim is still employed on work connected with the motor-vehicle industry. This aspect of the Daimler-Benz production is dealt with below, under "Engineering and Armaments", and the following relates exclusively to those parts of the works which are believed to be engaged on aero-engine work.

For several years prior to the war the Daimler-Benz company undertook the development of aero-engines, and prototypes were built and tested at this works. It is thought that up to 1939 no large-scale production of aero-engines was undertaken, except at the branch factories at Genshagen and Marienfelde, near Berlin. Reports suggest that these two factories were supplied with components from Untertürkheim. It is not definitely known when the complete construction of aero-engines at Untertürkheim commenced, but it seems probable that it was during the early part of 1942. Up to the end of that year aero-engines erected at Untertürkheim were transported to Sindelfingen for testing, but since then the Untertürkheim works has been very greatly extended, and it is clear from reconnaissance photographs that most of the sections are connected with the production of aero-engines, which is now taking place at Stuttgart on a large scale. Several series of engine test-beds have been erected, and it is believed that Untertürkheim now represents one of the principal production centres for Daimler-Benz engines.

Engineering and Armaments

Daimler-Benz A.G.

Untertürkheim

(1)

Owing to its interests in other industries (particularly the aero-engine industry - see above) the Daimler-Benz company is the largest motor-vehicle concern in Germany. In terms of output the Untertürkheim plant is second only to Opel, its 1938 production figures being 20,000 passenger cars and 6,000 commercial vehicles. There is reason to believe that the manufacture of commercial vehicles, particularly lorries, has increased considerably in the course of the war, and that there has been a corresponding decline in the output of cars, production of which is confined mainly to military types. Several sections of the Untertürkheim plant are engaged on the manufacture of components for motor vehicles, which are partly supplied to
/their

STUTTGART (contd.)

Daimler-Benz A.G. (contd.)

their branch works at Gaggenau and Sindelfingen. No definite information regarding the number of workers at present employed at Untertürkheim is available, but ground reports suggest that the total is approximately 20,000, including the very large number of workers employed in the aero-engine sections described above (under "Aircraft and Aero-Engines").

Robert Bosch A.G.

- a) Feuerbach (1+)
- b) Stuttgart-Militär Str. (1)

The principal works of this firm is at Feuerbach, a suburb of Stuttgart. A second works in this area is in the middle of Stuttgart (west of the main railway station) but although it has been repeatedly extended since 1939 it is not as important as the Feuerbach works.

The outstanding value of the Bosch works to the German armament industry is their very large output of fuel injection pumps, magnetos, sparking plugs, and batteries, as well as the usual Bosch range of electrical accessories for internal combustion engines. In addition the Feuerbach and Stuttgart works make a wide range of other electrical appliances such as components for search-lights, head-lamps, etc., but there are, of course, only of secondary importance. Bosch operate a subsidiary factory at Klein-Machnow near and also an affiliated factory in German occupied territory but it is estimated that the Stuttgart factories of Bosch still account for more than half of Germany's total requirements of fuel injection pumps, magnetos, sparking plugs, and other electrical accessories for internal combustion engines. It is estimated that the Feuerbach works employs some 20,000 workers and that a further 10,000 hands are engaged at Stuttgart-Militär Str.

Zeiss Ikon (Contessa)

Dornhalderstr. (2)

The Stuttgart works of the Zeiss Ikon A.G. of Dresden are known as the Contessa Werke. This branch specialises in the manufacture of cameras and photographic appliances of all kinds. It is now believed that their range of products has been widened to include the grinding and polishing of optical lenses and a wide range of optical instruments. Some 2,000 workers were reported to be employed in 1942.

/Fortuna Werke

STUTTGART (contd.)

Fortuna Werke Pragstr. (3)

The Fortuna Werke Spezialmaschinenfabrik A.G., whose works are in Bad Cannstatt, are makers of sawing, planing and grinding machines (including universal grinders, internal grinders, ball and race grinders), and also of measuring apparatus. They employed some 950 workers in 1939.

H.Längerer Stuttgart (3)

This firm manufactures radiators, including aircraft radiators, and was formerly known as Kühlerfabrik Längerer & Reich A.G.

Adolf Zaiser Bahnhofstr. (3)

The Adolf Zaiser Maschinenfabrik G.m.b.H. employed some 400 workers before the war, and were makers of elevators and framed steel structures.

Adolf Friz G.m.b.H. Haldenstr. (3)

The firm of Adolf Friz G.m.b.H., whose works are in Cannstatt, produced machinery for the woodworking industry before the war but are reported now to be making the moveable parts of watertight compartments for submarines on a large scale and are also said to be assembling steering-gear components. The reports suggest that some 300 workers were employed in 1943.

J.C.Eckardt A.G. Pragstr. (3)

Carl Mahr Plichingerstr. (3)

Julius Ortlieb Mettingenstr. (3)

The J.C.Eckardt A.G., whose works are in Bad Cannstatt, are makers of pressure gauges for use in submarines, manometers and pressure indicators, and thermometers for use in aircraft. Before the war they employed some 200 workers. The two other firms mentioned above, whose works are both in Esslingen, have a similar range of products and are approximately equal in size.

/Hänni & Co.

STUTTGART (contd.)

Hänni & Co. G.m.b.H.

Olgastr.

Wizemenn & Co.

Im Schwenkrain

} (3)

These two firms, whose works are in Bad Cannstatt, are makers of manometers, pressure indicators and gauges, and measuring instruments of all kinds, principally for use in aircraft and submarines.

G.Lufft

Neue Weinsteige

(3)

The G.Lufft Metallbarometerfabrik G.m.b.H. make altimeters, recording barometers, and other meteorological instruments.

C.Haushann

Borsigstr.

R.Stahl

Ulmerstr.

} (3)

The above two firms are makers of lifts, cranes, weighbridges, escalators and bucket elevators. They are among the leading German firms in this branch.

Wilhelm Grupp

Hofenerstr.

(3)

The Wilhelm Grupp Eisengiesserei G.m.b.H. have an iron foundry in Bad Cannstatt and are reported to supply castings to the Bosch concern.

Kolbenbolzen Fabrik

Rotebühlstr.

(3)

The Süddeutsche Kolbenbolzen Fabrik G.m.b.H. are believed to employ some 800 workers and to manufacture piston rings for internal combustion engines. They are important suppliers of these products to the aero-engine industry.

Alfred Knecht

Haldenstr.

(3)

This firm, whose works are in Bad Cannstatt, manufactures small components for motor engines and specialise in petrol filters.

Kreidler's Metall- & Drahtwerke

Zuffenhausen

(3)

This is the parent works of Kreidler's Metall- & Drahtwerke G.m.b.H., who are important producers of pressed and drawn rods, bars and sections in light and heavy metals as well as of profiles in all forms.

/G.Boley

STUTTGART (contd.)

G.Boley Mettingenstr. (3)

This firm makes lathes and grinding machine tools, and prior to the war employed some 350 workers.

Norma Cannstatt (1)

The Norma Compagnie G.m.b.H., which is owned and operated by the Vereinigte Kugellagerfabrik A.G., is the largest German ball-bearing works outside Schweinfurt. These works specialise in the production of the smaller sizes of ball bearings, such as are used in peacetime in textile machinery, and particularly in small precision bearings for magnetos, for which the Norma is the principal supplier to the Bosch works. This factory is also responsible for a large proportion of the bearings used in aircraft controls, predictors and other instruments. The Norma plant has been greatly extended in recent years. Several thousand workers were employed in 1943.

Esslinger Maschinenfabrik Esslingen (1)

The Esslinger Maschinenfabrik A.G. are important makers of locomotives, including main-line locomotives (of which their output has been reported as 15 per month), stationary steam engines, boilers, pumps, compressors, refrigeration plant, tank wagons, and constructional steel products. They employed some 3,000 workers before the war and it is believed that this number has now increased. Ground intelligence suggests that a number of new departments were opened in the course of 1942 and are specialising in the manufacture of components for the standard-type locomotive. The works occupy a large area situated between the railway line and the right bank of the river Neckar, midway between Untertürkheim and Esslingen.

A.E.G. Bad Cannstatt (3)

The Stuttgart works of the A.E.G. produce mainly electrical tools, generators for water turbines, electrical motors of all types, switchboard gear and transformers.

Fr. Hesser Maschinenfabrik Olgastr. (3)

The Fr. Hesser Maschinenfabrik A.G., whose works are in Bad Cannstatt, are makers in peacetime of automatic packing, folding, weighing and labelling machines. A large proportion of their machines were exported.
/Before

STUTTGART (contd.)

Fr. Hesser Maschinenfabrik Olgastr. (3)

The Fr. Hesser Maschinenfabrik A.G., whose works are in Bad Canstatt, are makers in peacetime of automatic packing, folding, weighing and labelling machines. A large proportion of their machines were exported. Before the war they employed some 800 workers. It has been reported that the factory is now engaged on the manufacture of components for submarine and tank engines.

Wagner & Eisenmann Esslingerstr. (3)

The factory of this firm is in Obertürkheim and prior to the war made boilers for steam engines and locomotives. It is now reported that they are concentrating on plate for armoured vehicles and are working in conjunction with the Daimler-Benz concern.

M. Streicher Lindenstr. (3)
Bad Cannstatt

This firm manufactures municipal vehicles, including road-sweeping, washing and sprinkling machines, and refuse-collecting vehicles.

Mahle K.G. a) Bad Cannstatt (2)
b) Waiblingen (3)
c) Fellbach (3)

The Mahle K.G., with which the Stuttgart branch of the Elektronmetall G.m.b.H. is amalgamated, are among the leading German makers of under-carriages, brakes, wheels, pistons and other components for aircraft and aero-engines. They are believed to supply a large percentage of the total German requirements. Other products made by this firm on a large scale are bomb components, fuze bodies, components for incendiary projectiles etc. Some 3,000 workers are engaged in the above three plants. The factories at Waiblingen and Fellbach have both been constructed since the outbreak of war, and in July 1943 the Waiblingen works were still in course of erection.

Hahn & Tessky Esslingen (1)
Stuttgart (3)

The Hahn & Tessky Indexwerke K.G. are among the leading German makers of machine tools, and are in particular the leading German makers of capstans. Their range of other machine tools include lathes, drills, presses, boring and grinding machines, (including deep-hole borers), lapping machines, and /centreless

STUTTGART (contd.)

Hahn & Tessky (contd.)

grinders, milling and thread-cutting machines, and jigs of all kinds. Other specialities are high-speed automatic screw machines used in the production of certain components for aircraft, tanks, bomb fuzes, guns, and radio equipment. Approximately 2,000 were employed at the Esslingen plant before the war but ground intelligence suggests that the number has risen to over 3,000 by mid-1943. Hahn & Tessky also have a small branch assembly works in the centre of Stuttgart, adjacent to their administrative offices. Some 500-600 workers are believed to be employed at the Stuttgart works.

Robert Schenck Stuttgart (-)

The Robert Schenck Wagenfabrik manufactures trailer vehicles and is one of the smaller firms in Germany for this type of vehicle.

Chemicals and Explosives

Hauff Feuerbach (3)
Adolf Hitler Str.

The Hauff A.G. manufacture photographic films, chemicals and dyestuffs. Some 1,300 workers were employed in 1939.

Leather

Mercedes Bad Cannstatt (3)
Friedrich Ettwein Str.

The Mercedes Schuhfabrik A.G. are one of the leading boot and shoe manufacturers. They employed some 2,000 workers before the war and in 1942 they were reported to be producing 1,500 pairs of military boots daily, in addition to an output of 1,100 pairs for civilian requirements. Reports suggest that extensive use is being made of synthetic materials. The works was reported in 1943 to be working to full capacity.

Textiles

Rohtex A.G. für Textilrohstoffe Untertürkheim (3)

Reports suggest that a large stock of textile raw materials are stored here.

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SUHL (Saxony)

50° 35' N. 10° 40' E: 475 miles: (23,500)

Suhl lies in the Thuringer Wald and the railway line between Gotha and Coburg passes through it. Before the war, the main industry of the town was the manufacture of small arms and bicycles and bicycle components. Today, production of small arms has largely increased, and the town is now an important source of supply to the armed forces of rifles, pistols, and machine guns. It is probable that the manufacture of bicycles etc. has practically ceased.

Transportation

Railway Repair Shops Suhl (3)

These are medium-sized repair shops undertaking the repair of goods wagons.

Public Utility

Gasworks Suhl (3)

The gasworks of the Gasversorgung Thür. Wald G.m.b.H. made 106 million cubic feet of gas in 1936.

Engineering and Armaments

Haenel Suhl (2)

The C. J. Haenel Waffenwerk are makers of machine-pistols, rifles and other types of automatic weapons. They are reported to have a weekly output of 700 machine-pistols and 250 rifles, and to employ some 4,000 workers.

Gustloffwerke Suhl (2)

The Berlin-Suhler Waffen- & Fahrzeugwerke (Gustloffwerke) are one of the largest of the small-arms manufacturers in Suhl. This company has three factories. The first is 2 miles North of the town, the second mid-way between Suhl and the small village of Heinrichs, 2 miles to the West, and the third in Heinrichs itself. Each of these three plants employs several hundred workers on the manufacture of light and heavy machine guns, rifles, pistols, and small-arms ammunition. The company has its parent works and head office at Weimar.

Sauer/

SUHL (Saxony) (Contd.)

Sauer & Sohn Suhl (2)

The firm of J.P.Sauer & Sohn has a similar range of products to the Gustloffwerke mentioned above, and is reported to have a weekly output of 750 machine-pistols. Some 4,000 workers are reported to be employed.

Ammunition Factory Suhl (-)

It is reported that a new underground ammunition factory, probably a shell-filling depot, has been built to the North-east of Suhl railway station. Some 2,500 workers are said to be employed.

Krieghoff Suhl (3)

In 1942 the firm of Heinrich Krieghoff was reported to be employing some 1,200 workers and to be producing machine guns and pistols.

- Greifelt & Co. Lauwetter
- Franken & Lünenschloss Mühlplatz
- Dornheim A. G. Suhl (2)
- Ernst Kerner & Co. Lutterothstr.
- Stotz & Goessel Erffastr.

The above are five of the larger of many firms in the Suhl area producing small arms, including rifles, pistols, and machine guns. It is believed that several hundred workers are employed by each firm.

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SWINEMUNDE/

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SWINEMÜNDE (Pomerania)

53° 55' N. 14° 15' E: 625 miles: (27,000)

Swinemünde is 30 miles North of Stettin on the isthmus between the Baltic and the Stettiner Haff, a large lagoon at the mouth of the River Oder. It is directly connected by rail with Stralsund and with Anklam, and a third line leads from Swinemünde round the Eastern side of the Haff to Stettin. In peacetime Swinemünde is a holiday resort and a fishing port, but since the war it has attained considerable importance as an auxiliary naval and seaplane base, and two new shipbuilding yards which are now in full operation are building large numbers of armed drifters and other small naval craft.

Transportation

Port Area Swinemünde (3)

The port area lies to the South of the town. There are three main docks known as the Winterhafen, Kahnhafen, and Kohlenhafen. A petrol depot, the small municipal gasworks, a seaplane wharf, and barracks lie in the South-western corner of the port area.

Liquid Fuels

Oil Storage Swinemünde (3)

The oil-storage tanks, of which there are several in the port and in the town itself, are reported to have a total storage capacity of 104,000 tons.

Aircraft and Aero Engines

Seaplane Base Swinemünde (3)

A seaplane base and an adjacent aerodrome are on the Eastern bank of the River Swine to the South of the town. There is also a small seaplane wharf in the extreme South West corner of the main port area.

Shipbuilding

Novenhaken Swinemünde (3)

The Swinemünde shipbuilding yards are known as Movenhaken-Ost and Movenhaken-West. The first of these yards is on the right bank of the River Swine opposite the port area. The second yard includes a large area of land also on the right bank of the River Swine between the aerodrome and the river. This area appears to have been reclaimed and well camouflaged. In 1942 the yards began constructing large numbers of armed drifters. These are of typical fishing-boat design and each boat mounts two guns of 75 mm. and 20 mm. (or 37 mm.) respectively. In 1943 21 drifters had been completed and 18 were on the slips.

TABARZ/

TABARZ (Thuringia)

See Waltershausen

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TEICHWOLFRAMSDORF (Thuringia)

50° 45' N. 12° 15' E: 540 miles: (2,000)

Teichwolframsdorf is 5 miles South-west of Werdau (which is in Saxony). Apart from a large spinning mill, there is no industrial development.

Textiles, Rayon, Pulp and Paper

Windisch

Teichwolframsdorf (3)

The C.F. Windisch A.G. are cotton spinners who are reported to have taken over the production quotas of several other textile mills which have been closed down during the war. In October 1942 the number of workers employed at these works was stated to be 3,200, chiefly women, although in 1938 only 800 workers were employed.

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TENINGEN (Baden)

48° 45' N. 7° 55' E: 425 miles: (2,500)

Teningen is 4 miles North of Freiburg on the main railway between Karlsruhe and Freiburg. The only industry of importance in Teningen is the large aluminium plant.

Non-Ferrous Metal Manufacture and Fabrication

Tscheulin G.m.b.H.

Teningen

(3)

The Aluminium Werk Tscheulin G.m.b.H. are manufacturers of aluminium tubes and special aluminium foil for radio condensers. The number of workers employed has been reported to exceed one thousand.

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THALE (Province Saxony)

51° 45' N. 11° 5' E: 480 miles: (14,000)

Thale is 5 miles South-west of Quedlinburg on a branch railway leading to Blankenburg. It is a tourist resort at the Eastern end of the Harz Mountains and at the entrance to the Bodethal. The only industry of note is the large iron and steel works.

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THALE (Province Saxony) (Contd)

Iron and Steel

Eisenhüttenwerk Thale A.G.

Thale

(2)

The Eisenhüttenwerk Thale A.G. are old-established iron and steel works which in 1936 celebrated the 250th anniversary of their foundation. The works are in the southern quarter of the town at the entrance to the narrow gorge of the Bode valley. They include three open-hearth and two electric annealing furnaces, sheet-metal and cold-rolling mills, an iron foundry, and welding plant. In peacetime the products included sheet metal, cast-iron enamelled ware, and containers of all kinds for the chemical, brewing and distilling industries. They claim to be one of the largest producers of enamelled ware in Europe. These works are now reported to be turning out torpedo components, buoys and floats for mine sweeping and barrage nets; and steel components for contact mines. Some 4,000 workers were employed before the war.

TILSIT (East Prussia)

55° 5' N. 21° 55' E: 94.5 miles: (58,000)

Tilsit, on the River Memel, lies on the borders of East Prussia and the Memel territory. It is the most northerly town in Germany and is the marketing centre of an important agricultural district. Tilsit lies on the railway line from Insterburg to Memel which crosses the River Memel at Tilsit, but which is of no target priority. Amongst other food products it is noted for Tilsiter cheese. There is a considerable timber industry and the only important single factory in Tilsit is the Zellstoff-Fabrik of the Waldhof concern. There is a second plant of this firm at Ragnitz which lies six miles South-east of Tilsit.

Chemicals & Explosives

Zellstoff-Fabrik Waldhof A.G.

1) Tilsit

(3)

2) Ragnitz

(-)

- 1) The Tilsit factory of the Zellstoff-Fabrik Waldhof A.G. of Mannheim is an important producer of sulphuric acid. The plant also produces sulphur dioxide for sulphite pulp. In 1928 the annual capacity of sulphuric acid (100 per cent. acid) was given as "large, - over 20,000 tons".
- 2) A second plant of this firm is situated at Ragnitz, 6 miles South-east of Tilsit, but there is no information as to its capacity, though it is known to be smaller than the Tilsit works.

TODTNAU/

TODTNAU (Baden)

47° 50' N. 7° 55' E: 44.0 miles: (2,500)

Todtnau is 15 miles South-east of Freiburg in the southern area of the Black Forest. In peacetime the manufacture of brooms is a speciality of the town. A recent report suggests that a new explosives factory has been erected in the vicinity of Todtnau.

Chemicals and Explosives

Hermann Göring

Todtnau

(-)

A recent report states that a new explosives factory has been erected by the Hermann Göring concern in the vicinity of Todtnau. The works, which are stated to be well camouflaged, are reported to employ some 2,900 workers.

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TORGAU (Province Saxony)

51° 35' N. 13° E: 565 miles: (15,000)

Torgau, on the River Elbe, is on the railway from Leipzig to Cottbus. It is a junction for a branch connecting with the main Leipzig-Berlin line. In peacetime Torgau is mainly an agricultural marketing centre. In addition to the agricultural-machinery factory there is a small glassworks. In Elsnig, a small town 5 miles North-west of Torgau, there is an important branch of the WASAG explosives concern.

Engineering and Armaments

Wilhelm Stoll

Torgau

(-)

The Wilhelm Stoll Maschinenfabrik made agricultural tools and implements. Some 300 workers were employed before the war.

Chemicals and Explosives

WASAG

Elsnig

(3)

The Westfälisch-Annhaltische Sprengstoff A.G. have an important factory in Elsnig. This plant has an estimated annual capacity of 32,000 tons of sulphuric acid. A recent report states that approximately 500 tons of T.N.T. are produced monthly. The Elsnig works have presumably replaced the plant at Reinsdorf.

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TREBBIN/

TREBBIN (Brandenburg)

52° 15' N. 13° 15' E: 570 miles: (4,000)

Trebbin is 20 miles South of Berlin on the railway to Leipzig. In peacetime it is a small market-gardening centre. Its present industrial significance is due to the erection of a new aircraft factory, which is mentioned below.

Aircraft and Aero Engines

Aircraft Factory Trebbin (-)

Several recent reports state that a new aircraft factory has been erected in the vicinity of Trebbin. It is said to be in the pine woods to the East of the town and to employ some 4,000 workers. No satisfactory confirmation of the reports has as yet been received.

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TRIER (Rhineland)

49° 45' N. 6° 40' E: 320 miles: (80,000)

Trier is on the River Mosel close to the border of Luxembourg, and on the railway which follows the Mosel valley from Koblenz to Metz. It is an important garrison and army training centre, and there are several large barracks, mostly grouped in the North-eastern quarter of the town. Trier is a market centre for the wine-growing district of the Mosel valley. Apart from the large railway-repair shops, the only industries are a few small engineering plants. A large engineering works is located in the small town of Konz-Karthus, 4 miles South-west of Trier.

Transportation

Railway Repair Shops Trier (2)

These large railway workshops are in the southern quarter of the town on the left bank of the River Mosel. Some 1,300 workers are employed on the repair and maintenance of locomotives, passenger coaches and goods wagons. This area also includes marshalling yards and goods sidings.

Public Utility Services

Power station Trier (3)

The thermal power station is owned by the R.W.E.; in 1941 its installed capacity was reported to be 35 MW.

Gasworks Trier (3)

The municipal gasworks in Trier made 155 million cubic feet of gas in 1937.

Engineering/

TRIER (Rhineland) (Contd.)

Engineering and Armaments

Zettelmeyer

Konz-Karthaus (3)

The engineering works of Hubert Zettelmeyer are in Konz-Karthaus, 4 miles South-west of Trier, which forms part of the municipal area. A recent report states that more than 1,000 workers are now employed. These works manufacture gun tractors and tractors for agricultural purposes, most of these being powered by diesel engines of the 4-cylinder type.

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TROSTBERG (Bavaria)

48° 5' N. 12° 35' E: 610 miles: (3,500)

Trostberg is 20 miles North-east of Rosenheim and 10 miles North of the Chiemsee. It is on a branch railway which runs from Traunstein on the main Rosenheim-Salzburg line to Mühldorf on the river Inn. Trostberg is important as the site of the chemical works of the Bayerische Stickstoffwerke A.G. It is on the river Alz, which is utilised for part of the Inn-Alz hydro-electric scheme.

Public Utility Services

Inn-Alz Hydro Scheme

Trostberg (2)

The Inn-Alz hydro-electric scheme includes four stations along the valley of the River Inn, which are dealt with under the heading "Mühldorf", and four stations along the valley of the River Alz, a tributary of the Inn, which are as follows: Trostberg (2 MW), Tacherting (8 MW), Margarethenberg (17 MW), and Holzfeld (35 MW). Trostberg and Tacherting are owned by Bayerische Stickstoffwerke A.G.; Margarethenberg by Bayerische Kraftwerke A.G.; and Holzfeld by Alzwerke G.m.b.H., Munich. These stations utilise the water power of the River Alz along a 20-mile stretch from Trostberg to Holzfeld near the influx of the Alz into the Inn. A diversionary canal 5 miles in length is cut from near Margarethenberg to Holzfeld. These power stations serve the various carbide/cyanamide plants in this area. The Holzfeld station serves the plant at Burghausen, which is described under the latter heading, and the plant at Steiner am Hart, which is described under the heading "Mühldorf". The Margarethenberg station serves the Steiner am Hart and Trostberg plants. The Tacherting and Trostberg stations serve the plants at Schalchen and Trostberg. The stations are interconnected by a high-voltage transmission network.

Chemicals/

TROSTBERG (Bavaria) (Contd)

Chemicals and Explosives

Stickstoffwerke	Trostberg	} (3)
Stickstoffwerke	Schalchen	

The Trostberg plant of the Bayerische Stickstoffwerke A.G. produces, in conjunction with the Piesteritz works of this concern, 125,000 tons of nitrogen annually. Calcium cyanamide is also produced, and in 1937 their output of this chemical was 30,000 tons. Formerly some 600 workers were employed in the Trostberg plant, but this number has probably been increased. The Schalchen plant, which is at Tacherting 4 miles North of Trostberg, produces calcium carbide for supply to the Trostberg factory.

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TÜBINGEN (Württemberg)

48° 30' N. 9° 5' E: 460 miles: (30,000)

Tübingen is on a branch railway line 20 miles South of Stuttgart. The town, which lies on either side of the river Neckar, is a marketing centre for the surrounding fruit-growing and agricultural district. Apart from an electrical-engineering firm, the remaining industries, which include textiles, furniture, and surgical instruments, are on a small scale.

Transportation

Railway Repair Shops	Tübingen	(3)
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These are medium-sized railway workshops undertaking the repair and maintenance of goods wagons.

Engineering and Armaments

Himmelwerk	Tübingen	(3)
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The Himmelwerk A.G. are makers of electric motors of small horse-power, particularly for driving machine tools. The plant has been extended during the war, and it is now reported that the number of workers is approximately 1,000.

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TÜTTLINGEN

TUTTTLINGEN (Württemberg)

48° N. 8° 50' E: 470 miles: (30,000)

Tuttlingen is in the valley of the upper Danube on the main railway from Stuttgart to Schaffhausen and Zurich. The chief industries are the manufacture of surgical, dental, and laboratory instruments, and also boots and shoes. Both these industries are represented by a number of factories, many of which, particularly the shoe factories, are on a small scale.

Engineering and Armaments

A.G. für Feinmechanik Tuttlingen (2)

The A.G. für Feinmechanik vorm. Jetter & Scheerer are manufacturers of many varieties of surgical, dental, and laboratory instruments, and are the largest of a number of similar firms in Tuttlingen. Before the war they employed some 1,700 workers.

Armaments Factory Tuttlingen (-)

A recent report states that a new factory has been erected to the North-west of the town near the railway to Stuttgart. Some 2,000 workers are said to be employed. The products include tank components for supply to the Magirus plant in Ulm.

Leather

Carl Henke	Möhringerstr.	} (3)
Rieker & Co.	Bahnhofstr.	
J.G. Stengelin	Balingerstr.	

The above are among the large number of firms in Tuttlingen making all varieties of boots and shoes, including special types such as ski-boots. They are known to be supplying military footwear.

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TUTOW (Pomerania)

53° 55' N. 13° 15' E: 585 miles: (-)

The small village of Tutow is 9 miles East of Demmin on the road to Swinemünde. Its only importance is due to the assembly plant of the Arado aircraft concern.

Aircraft/

TUTOW (Pomerania) (Contd)

Aircraft and Aero Engines

Arado

Tutow

(1)

The Arado Flugzeugwerke G.m.b.H., the parent works of which are in Brandenburg an der Havel, have a large assembly plant at Tutow. It was originally a repair and testing station, and is believed to have been inactive during part of 1943, probably for the purpose of conversion of many of the existing installations. In the course of 1943 the final assembly of FW.190's was taken up and has since reached a considerable scale. After damage to the Arado components factories at Warnemünde and Anklam, it is believed that Tutow has taken over part of the work formerly done at Marienburg. Components are probably drawn from Kreisling and Posen, which formerly supplied Marienburg, as well as from the reconstructed plants at Warnemünde and Anklam. Aero-engines are imported from Berlin.

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UECKERMÜNDE (Pomerania)

53° 45' N. 14° 5' E: 635 miles: (8,000)

Ueckermünde lies 15 miles Sout-east of Anklam at the mouth of the small river Uecker, which flows into the estuary of the Oder. It is at the terminus of a branch line which leaves the Stettin-Stralsund line 10 miles of Ueckermünde. Its industries are of little importance, and include an iron foundry, brick making, and a small fishing harbour. It has, however, been reported that a new factory has been built during the war, which is making special electrical equipment for submarines and other naval craft.

Engineering and Armaments

New Factory Ueckermünde (-)

A new factory is reported to have been completed at Ueckermünde by September 1942, and to be making electrical equipment for submarines and other naval craft. The report has not yet been definitely confirmed.

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UELZEN (Hanover)

52° 55' N. 10° 35' E: 470 miles: (14,000)

Uelzen is on the Eastern side of the Lüneburger Heide, 55 miles North-east of Hanover, and at the intersection of the two important railway lines from Hamburg via Lüneburg to Hanover, and from Berlin via Stendal to Bremen. It is the centre of an agricultural area and of the exploitation of the siliceous earth in this neighbourhood, which is largely used for asbestos preparations. There are several engineering works, which in peacetime are on a minor scale, but it is reported that the Rheinmettal-Borsig concern has now established an ammunition works at Uelzen.

Engineering and Armaments

Rheinmettal-Borsig Uelzen (-)

An ammunition factory at Uelzen, belonging to the Rheinmettal-Borsig is reported to have gone into full production in the autumn of 1942, and to be employing some 3,600 workers. Definite confirmation of the report has not yet been obtained.

Kliefoth Uelzen (-)

The Asbest & Kieselgurwerke Kliefoth & Co. K.G. are makers of asbestos insulating material, and exploiters of the siliceous earth of fossil meal deposits found in this part of the Lüneburger Heide.

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UERDINGEN/RHINE (Rhineland)

51° 23' N. 6° 30' E: 285 miles: (15,300)

Uerdingen lies to the North-east of the city of Krefeld along the western bank of the River Rhine. Although a distance of some 4½ miles of fairly open country lies between Krefeld and Uerdingen, the latter was incorporated in 1929 and the city of Krefeld became known as Krefeld-Uerdingen.

Besides extensive harbour facilities, Uerdingen is important for its chemical, engineering, and foodstuff industries.

Transportation

Hauptbahnhof Uerdingen (3)

Main passenger and goods station, about half a mile from and parallel to the river Rhine.

Uebergabe Bahnhof Uerdingen (3)

This is a terminus goods station situated about one mile South West of the main station.

Uerdingen-Hafen Uerdingen }
Rheinhafen Uerdingen } (3)
Osthafen Uerdingen }

These three harbours on the western bank of the River Rhine are situated North, South, and S.S.W. of the town. Just North of the Rheinhafen is the Adolf Hitler Brücke, a road bridge across the Rhine. The Uerdingen harbour lies directly north of the I.G. chemical works, and the Osthafen is divided from the Rheinhafen by a small rail bridge. All three ports are complete with the usual harbour installations and storage facilities and the total tonnage of goods handled in 1938 amounted to 1,190,000 tons of which 778,000 were outward bound and 605,000 inward bound.

Verschiebebahnhof Hohenbudberg (2)

These large marshalling yards lie 2 miles North East of Uerdingen main station. They have a capacity of 6,700 waggons per 24 hours.

Public Utility

Gasanstalt Uerdingen (3)

The Uerdingen municipal gasworks is situated in the south-eastern corner of a large park to the north-west of Uerdingen main station. In 1937 it purchased some 62 million cubic feet from the Ruhrgas A.G.

Wasserwerke/

UERDINGEN/RHINE (Rhineland) (Contd)

Wasserwerke

Uerdingen (-)

The town waterworks lie to the south of the municipal gasworks and abattoir in the same complex.

Iron and Steel and Ferro-Alloys

Rheinholdshütte

Uerdingen (3)

This steel works is a branch of Stahlwerk Becker A.G. of Willich. In 1934, both the Willich works and the Rheinholdshütte were leased to the Deutsche Edelstahlwerke A.G. This latter company has been controlled by the Vereinigte Stahlwerke A.G. since 1937. The works lie on the west bank of the River Rhine one and a half miles South-east of Uerdingen main station and directly north of and between the Osthafen and the river, thus affording easy transport of coal, ore and finished goods to and from the plant. It is possible that production at this plant is linked with that of the main Deutsche Edelstahl works about 5 miles to the South West of it.

Liquid Fuels

Deutsche Rizinus Oelfabrik
Boley & Co.

Uerdingen (3)

Lying approximately half a mile to the south-east of Uerdingen main station and directly along the west bank of the Rhine, this plant produces mainly castor oil.

Engineering and Armaments

Büttner-Werke A.G.

Uerdingen (3)

The site of this firm forms a fairly extensive triangle of 89,862 square metres the base of which lies along the western side of the main railway station and the apex of which practically meets the city waterworks in the south-east corner of a park. The plant itself covers an area of 66,223 square metres and comprises machine shops, assembly halls, foundry with 3 ovens, loading, storage and administrative buildings. Also a small power station. Industrial drying, cooling and vacuum installations are produced and in 1938, the workers numbered some 1,000.

Waggonfabrik/

UERDINGEN/RHINE (Rhineland) (Contd)

Waggonfabrik Uerdingen A.G.

Uerdingen (2)

Lying about half a mile north of the main railway station and covering an area of approximately 37 acres on a site of 153 acres, this plant comprises large assembly, finishing, iron working, wood-working, forge and machine shops for the production of railway coaches, springs and shock absorbers. Variable pitch air screws are also said to be produced but there is no firm evidence to this effect. A 1943 report gives the number of workers as 3,000 and production as 3-4 wagons, and 2 tank wagons per day. (The pre-war capacity of this works for 20 tons standard wagons is estimated at 5,000 wagons per annum and the estimated number of workers - also pre-war - is 1,000 to 1,2000.)

Chemicals and Explosives

I.G.Farbenindustrie A.G.

Uerdingen (2)

This works was formerly known as the Chemische Fabrik Weilerter-Meer. It has an estimated annual capacity of between 10-20,000 tons of 100% sulphuric acid. It is also engaged in the production of dyestuffs and other chemicals. The plant commences directly to the North-east of the main railway station and follows the west bank of the river Rhine for about a quarter of a mile, at the same time extending inland also for about a quarter of a mile.

Guano-Werke A.G.

Uerdingen-Linn (3)

Covering an area of 36,600 square metres on a site of 110,567 square metres, this plant is one of the most modern of its kind in Germany. It lies along the southern side of the Osthafen approximately $\frac{3}{4}$ mile from the main railway station of Uerdingen and south-west of the Rheinholds-hütte and is engaged on the production of fertilizer and sulphuric acid of which some 20,000 tons are produced per annum.

Textilas/

UERDINGEN/RHINE (Rhinsland) (Contd)

Textiles

Rheinische Kunstseide A.G.

Uerdingen-Linn (3)

This plant lies just to the west of the Rheinhafen and approx. $\frac{1}{2}$ mile south of the main railway station. It is reported that some extensions have been carried out and it is believed that the works are now engaged solely on the production of parachute silk. A further report from August 1943, mentions "a very large factory" which is said to have been built just west of the Rheinhafen and is believed to have "something to do with chemicals". It is possible that there is a connection between the new extensions made to the Rheinische Kunstseide plant and this "new factory", though aerial cover dated 1940 shows no indication of a) a new works nearby the Adolf-Hitler Bridge over the Rhine, or b) extensions to the Rheinische Kunstseide works.

Foodstuffs

Holtz u. Willemsen G.m.b.H.

Uerdingen (3)

This works, situated on the west bank of the River Rhine just north-west of Uerdingen main station, is engaged on the production of edible oils and prior to the war had an annual oil seed crushing capacity of 40,000 tons.

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ULM (Württemberg)

48° 25' N. 10° E: 500 miles: (68,000)

Ulm is the second largest town in Wurttemberg. It lies on the left bank of the Danube and on the main railway line from Stuttgart to Augsburg and Munich. It is the junction for an important branch line leading South to Friedrichshafen, and for three minor branch lines serving the surrounding district. The central area of the town is dominated by the famous "Münster" which is believed to be the largest Gothic Cathedral in the world; its steeple is 528 feet high and it is thus the highest steeple in Europe. The most important industrial undertaking in Ulm is the Magirus A.G. This firm specialises in fire-fighting equipment, but has now also attained a high degree of importance as a producer of A.F.V's and heavy armoured vehicles. There is a non-ferrous metal fabricating plant, which is described below, and several other engineering works, some of which are working exclusively for Magirus. There is also a small textile and leather industry. The Messerschmitt aircraft assembly works at Leipheim 10 miles east of Ulm, are included in the list given below.

Transportation

Railway Centre Ulm (2)

The main railway line from Stuttgart enters Ulm from the North-east and, after curving Southwards, passes through the main railway station, which is on the western side of the central city area, crosses the Danube and leads in an easterly direction to Augsburg and Munich. A branch line from Sigmaringen and South-western Wurttemberg enters the city area from the North-west and joins the Stuttgart line immediately north of the main railway station. The direct line from Ulm to Friedrichshafen diverges from the Munich route between the main station and the railway bridge and leads south-westwards along the left lead from Ulm North-east to Heidenheim and South along the River Ille to Memmingen.

Marshalling Yards Ulm (3)

The chief marshalling yards are to the North-west of the main railway station and inside the main curve made by the railway line from Sigmaringen before it enters the central city area. They are capable of handling up to 2,400 wagons per 24 hours. There is a large goods station adjacent to these marshalling yards and a second smaller goods station half a mile to the East alongside the line to Stuttgart.

Railway Repair Shops Ulm (3)

The railway repair shops, which are at the Eastern end of the marshalling yards,

are

ULM (continued)

are believed to undertake the repair of goods wagons and other rolling stock. It has however been reported that they have now been considerably extended and were expected to begin the construction of rolling stock during the winter 1942-43.

Public Utility Services

Electric Power Station

Ulm (3)

This thermal power station, built by the city of Ulm and now belonging to the Oberschwäbische Elektrizitätswerke A.G., is connected with the grid of the R.W.E. and is believed to have been increased in capacity from 25 MW to 60 MW. It is on the river Blau, a small tributary stream which flows through the city and joins the Danube near the Ulm railway station. An indoor substation connects the station by a 55-kV long-distance line to the RWE substation at Herbertingen for the main purpose of importing rather than exporting electricity. Supplies are given locally to consumers in the Ulm area.

Gasworks

Ulm (3)

The municipal gasworks made 217 million cubic feet of gas in 1931.

Non-ferrous Metal Manufacture and Fabrication

Wieland-Werke

Wielandstr (1)

The Weiland-Werke A.G. Metallwerke are brass founders and non-ferrous alloy fabricators. Their works which are to the East of the Central area, include copper and brass rolling-mills, and they are also known to make anti-friction and bearing alloys. They are important suppliers of duralumin and other light-alloy components to the German aircraft industry. Some 3,000 workers are believed to be employed.

Aircraft and Aero Engines

Messerschmitt

Leipheim (2)

The Messerschmitt assembly plant at Leipheim, 10 miles to the East of Ulm, is believed to work in conjunction with the Prüfening and Obertraubling plants at Regensburg. It is believed to

/have

ULM (continued)

have concentrated on the assembly of large gliders (Me.323's) and possibly also other Messerschmitt types. In 1943 the output at Leipheim was reported as 10 Me. 323's per month, and in addition the repair of an average of three gliders per week. Some 1,500 workers were said to be engaged in June 1943, but later reports suggest that this number had been increased. Reconnaissance photographs taken at the end of April 1944 showed considerable bomb damage and for the first time Me.262 fighters were identified at this works. No definite indication as to whether they had been assembled at Leipheim can as yet be given.

Engineering and Armaments

Magirus Werke

Ulm (Werk(1) (2)
 Ulm (WerkII) (2)
 Ulm (WerkIII) (2)

The Magirus Werke are, together with Metz of Karlsruhe, the chief German specialists in fire-fighting vehicles, ladders and heavy and auxiliary equipment. In 1936 the firm was taken over by the Klöckner- Humboldt- Deutz concern and the former Magirus company was liquidated. It is, however, still usual to refer to the works in Ulm as the Magirus Werke. In addition to their normal fire-fighting equipment, they are now believed to have taken up the production of A.F.V's or tanks on a large scale, and a number of reports indicate that Magirus has become a highly important supplier of heavy armaments.

Magirus have two works in Ulm proper (WerkI and Werk II) and a third large plant has now been established in Neu Ulm, the quarter of the town which lies on the right bank of the Danube.

The works referred to as Werk I are in the Schillerstrasse close to the railway bridge across the Danube. The second works are in the Blaubeurenstrasse in the Western suburb of Soflingen. They occupy a large area South of the Western end of the marshalling yards and are bisected by the small stream know as the Blau which flows through the town and into the Danube near the railway bridge.

There are several other factories (saw mills, roof-felting makers, a rayon mill, and a fertiliser factory) grouped round the Magirus works area. It is /thought.

ULM (continued)

Magirus (contd.)

thought probable that these two original works (Werk I and Werk II) are still mainly engaged on the production of fire-engines and equipment, particularly in view of the severe damage to Metz of Karlsruhe, and that the A.F.V's or tank production is carried out mainly by the new works in the Neu Ulm area. One report, however, indicates that some of the tanks are assembled at Werk II. Other products of this Ulm factory are reported to be Diesel engines, lorries, light transport-column vehicles, tractors, smoke-screen devices, propellers and shafts and other components for midget submarines. Reports suggest that in 1943 chenillettes, small tracked vehicles for reconnaissance, were being turned out. Reports state that up to 1944 the new works mainly built semi-tracked armoured cars, but that the serial production of tanks was expected to begin shortly. The number of workers employed by Magirus has been variously reported, and is certainly well over 15,000 in total.

Ulmer Schraubenfabrik

Blaubeurenstr. (3)

The Ulmer Schraubenfabrik Fervor (Max Sternweiler & K. Rauch) are manufacturers of screws, and are now reported to be working entirely for the Magirus concern. Their works are close to the Magirus Werk II.

Karl Kassbohrer

Ulm (3)

The firm of Karl Kassbohrer is one of the leading German manufactures of trailer vehicles.

Gebr. Eberhardt

Seestr (3)

The Gebr. Eberhardt (Rud. & Walther Eberhardt) were prior to the war makers of ploughshares and agricultural implements. Their factory is in the North-eastern quarter of the town and is now believed to be working for the Magirus concern.

Gebr. Braum

Blaubeurenstr. (3)

This firm manufactures roof-felting and bituminous products. Their works are adjacent to and North-east of the Magirus Blaubeurenstrasse plant and are reported to have been taken over by that company.

ULM (continued)

Steiger & Deschler

Söflingerstr (3)

The cotton and rayon spinning and weaving mills of this firm are immediately to the South of Magirus Blaubeurenstrasse works. In addition to this firm there are several other small textile works in Ulm making knitted goods, shirts and hosiery, which, according to ground reports, have all been taken over by Magirus.

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UNNA (Westphalia)

51° 30' N. 7° 40' E: 355 miles: (20,000)

Unna is 10 miles East of Dortmund on the railway line leading to Soest. Coal mining and the metal-working plants mentioned below constitute the main industries of the town.

Transportation

Marshalling Yards

Unna (3)

The Unna marshalling yards are capable of handling up to 3,000 wagons per 24 hours.

Solid Fuels

Alten Hellweg

Unna (3)

The coal mine of the Gewerkschaft des Steinkohlenbergwerks Alten Hellweg has one pithead, and in 1937 had an output of 300,000 tons of hard coal. There is a briquetting plant attached to this mine which produced 100,000 tons of briquettes in 1937. Approximately 1,000 workers are employed.

Non-Ferrous Metal Manufacture and Fabrication

Messingwerke Unna

Unna (3)

The Messingwerke Unna A.G. employed some 400 workers before the war. They are manufacturers of seamless pipes, sections, and other articles in copper and brass.

Iron and Steel and Ferro Alloys

Westig

Unna (3)

The Stahlwerk Westig A.G. employed some 300 workers before the war. Their steel-works have a cold-rolling mill and wire-drawing plant.

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VACHA (Thuringia)

50° 50' N. 10° E: 450 miles: (4,000)

Vacha lies 15 miles South-west of Eisenach and on a branch railway line which leaves the main Erfurt-Franfurt (Main) track at Berka 10 miles West of Eisenach and follows the valley of the river Werra to Meiningen. There are a number of basalt quarries and cement works and a works making agricultural machinery, but the only industry of importance is the cable works mentioned below.

Engineering and Armaments

Kabelwerk Vacha (3)

The Kabelwerk Vacha A.G. employed some 600 workers before the war and are manufacturers of rubber-insulated cable and wire.

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VAREL (Oldenburg)

53° 25' N. 8° 10' E: 375 miles: (8,000)

Varel is 10 miles South of Wilhelmshaven on the main railway line between Wilhelmshaven and Oldenburg. It is at the inner end of the Jade Busen, the wide estuary of the River Jade. The Jade Busen is a shallow bay which is not navigable for heavy craft beyond Wilhelmshaven. Varel has no industrial development, apart from the aircraft works mentioned below.

Aircraft and Aero Engines

Motorenwerke Varel Varel (3)

The Motorenwerke Varel G.m.b.H. in addition to the manufacture of aero-engine components, are reported to undertake the over-haul of aero-engines.

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VELBERT (Rhineland)

51° 20' N. 7° 5' E: 310 miles: (32,000)

Velbert is a small industrial town, 14 miles N.E. of Dusseldorf.

The town has several metal-working plants and its chief industry is the manufacture of locks of all types. Before the war more than 200 factories and workshops were engaged on this, but nearly all of these are believed to be closed down and the industry has been concentrated in eight factories which are solely engaged on the production of 25 different types of locks principally for motor vehicles.

The most important factories are listed below:-

Public Utility Services

Gasworks Velbert (3)

The municipal gasworks draws its supply from the Thyssen grid; in 1936 it sold 140 million cu. ft.

ENGINEERING AND ARMAMENTS/

VELTEN (Brandenburg)

52° 40' N. 13° 10' E: 570 miles: (9,000)

Velten is 15 miles North-west of Berlin on the railway to Neuruppin. It is 3 miles to the West of the River Havel, with which it is connected by canal. In peacetime Velten's industry includes the manufacture of tiled stoves and fire-bricks, linoleum, and iron and steel products. Since the outbreak of war the existing factories in Velten have been considerably extended and new factories have been erected, particularly to the South-west of the town.

Aircraft and Aero Engines

Ikaria Berlinerstr. (3)

The Ikaria Werke G.m.b.H. are manufacturers of aircraft accessories, including aircraft weapons and gun mountings.

Engineering and Armaments

Bergmann & Co. Velten (3)

The Velten works of the Theodor Bergmann & Co. K.G. are the parent works of this concern which also has factories at Bernau and Suhl. They are the leading German producers of tracer ammunition, and for many years before the war held a leading position in this field of special ammunition production. In 1938 the Velten works employed about 500 workers. They are reported to be still engaged on the production of machine pistols and tracer ammunition, but no recent output figures are known.

Veltag Velten (-)

The Veltener Ofen & Keramik A.G. are manufacturers of refractory bricks for industrial furnaces, earthen and stone tiles, ordinary tiles, and other roofing materials. Before the war some 600 workers were employed, and in 1938 extensions to the works were planned and there were indications that the company was extending its range of production.

Chemicals and Explosives

Chem. Fabrik Stockhausen Velten (-)

The Chemische Fabrik Stockhausen K.G. formerly manufactured all varieties of household and industrial soaps.

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VIERSEN (Rhineland)

VIERSEN (Rhineland)

51° 15' N. 6° 25' E: 280 miles: (35,000)

Viersen lies 9 miles South-west of Krefeld on the railway line from Krefeld to Venlo in Holland. Viersen is the junction for a line running South-east to München-Gladbach. The industry of Viersen is mainly textiles, and the largest firm is mentioned below.

Textiles, Rayon, Pulp and Paper

Pons & Zahn Sittarderstr (-)

The Pons & Zahn Textilwerke A.G. are cotton spinners and makers of cotton and artificial-silk fabrics and prints. They employed some 3,000 workers before the war. There is a branch works of this firm in Bochum. Ground reports suggest that the firm is now inactive.

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VILLINGEN (Baden)

48° 5' N. 8° 25' E: 450 miles: (16,000)

Villingen lies on the Eastern side of the Black Forest. It is 4 miles West of Schweningen (in Württemberg) and on the railway line through the Black Forest from Offenburg to Donaueschingen and Konstanz. Villingen is a centre for the manufacture of precision instruments and for metal working. The principal firms are described below, but a great deal of the work, which engages most of the population of Villingen, is carried on in small workshops dispersed throughout the town, many of which are in the workers' own homes.

Transportation

Railway Repair Shops Villingen (3)

These are medium-sized workshops undertaking the repair of goods wagons. They are adjacent to the railway station.

Non-Ferrous Metal Manufacture and Fabrication

Messingwerk Villingen (3)

The Messingwerk Schwarzwald A.G. are owned by the Wieland Werke A.G. of Ulm, important suppliers of duralumin and other light alloy components to the German aircraft industry. The Messingwerk Schwarzwald A.G. are brass founders and non-ferrous metal fabricators. Before the war they employed some 300 workers. The works are in the South of Villingen between the railway and the River Brizach.

Engineering and Armaments/

VILLINGEN (contd.)

Engineering and Armaments

Saba Werke

Villingen (3)

The Schwarzwald Apparatebau-Anstalt August Schwer & Söhne G.m.b.H. are radio manufacturers. They specialise in acoustic instruments and W.T. transmission and receiving sets for the German armed forces. 1,200 workers are reported to be employed. The factory is in the North-western quarter of the town.

Kienzle

Villingen (3)

The Kienzle Apparate A.G. manufacture and assemble precision instruments of all kinds. Before the war some 350 workers were employed. In 1943 they were reported to be producing "Schansender" for submarines at the rate of 300 per month. High-pressure regulators for aircraft are also reported to be included among their products, with an output of 1,500 per month. Approximately 1,000 workers were employed in 1943. This firm is associated with the Kienzle Uhrenfabrik A.G. of Schwenningen.

J. Kaiser

Villingen (3)

The Uhrenfabrik Villingen J. Kaiser G.m.b.H. are well-known manufacturers of clocks and precision instruments. Approximately 1,000 workers are believed to be employed.

Binder

Villingen (3)

The Maschinen- & Electro-Apparatefabrik Wilhelm Binder, who normally manufacture components for motorcars, are now believed to be specialising in searchlight components.

Chemicals and Explosives

Explosives Plant

Villingen (-)

It is reported that a new explosives plant has been constructed in the vicinity of Villingen. These works are said to have gone into operation in May 1941 and to be employing some 2,000 workers. The plant is well camouflaged and is partly underground.

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VOCKERODE (Anhalt)/

VOCKERODE (Anhalt)

51° 50' N. 12° 20' E: 535 miles: (400)

Vockerode lies 3 miles East of Dessau on the left bank of the Elbe, and on a branch railway between Dessau and Coswig. This small village has no importance apart from the large electric power plant described below.

Public Utility Services

Electric Power Station Vockerode (1)

The Elbekraftwerk, which is owned by the Elektrowerke A.G. of Berlin, is a thermal generating station which went into operation in 1939, and is now believed to have been extended. It is thought that the original intention was for this new station to replace the older Golpa-Zschornowitz power station. The installed capacity of the Vockerode station is 175 MW.

A 110-kV line is known to connect the station to Golpa-Zschornowitz, and it is probable that additional lines connect to Piesteritz, to reinforce the supply to the carbide-cyanamide works, and to Dessau.

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VÖLKLINGEN (Saar)

49° 15' N. 6° 50' E: 345 miles: (44,000)

Völklingen lies 5 miles West of Saarbrücken on the Northern bank of the river Saar. It is on the Western edge of the coal-mining district, the principal mines of which are described under the heading Saarbrücken. The chief industry of Völklingen is the large Röchling iron and steel works. There are two important electric power stations to the East and South-west of Völklingen.

Public Utility Services

Power Station Fenne (2)

This thermal power station is situated on the left bank of the Saar some 5 miles from Saarbrücken and a mile East of Völklingen. It was built as a French station in 1926, and is now owned by the Röchling'sche Eisen u. Stahlwerke G.m.b.H. Its installed capacity is at least 79 MW with a layout designed for an ultimate capacity of 185 MW. Fuel is supplied from adjacent coal fields.

An indoor substation adjoins the generator hall. Main switching is at 35 kV and cables at this voltage connect to Louisenthal, Wehrden, Hühnerfeld, Sprengen, and Gerslautern.

No long-distance supplies are given.

Power Station/

VÖLKLINGEN (contd.)

Power Station

Wehrden

(2)

This thermal power station is situated on the left bank of the Saar 2 miles West of the Fenne power station, in Wehrden, which adjoins Völklingen to the West. It is owned by the Kraftwerk Wehrden, G.m.b.H., an operating company in which the Röchling'sche Eisen u. Stahlwerke G.m.b.H. own 25% of the capital, and has an installed capacity of 60 MW.

There are two substations. One, the main substation, connects with local supplies at 5.25 kV and 35 kV. The other, a special substation for 6.25 kV, 10 kV and 35 kV, is associated with one of the low-pressure turbo-generators which is leased to the Vereinigte Saar Elektrizitäts A.G., a company which controls the general distribution of the town of Saarbrücken. Half of the output of the station is delivered to the iron and steel works of the Röchling'sche Eisen u. Stahlwerke. There are 35 kV-lines to Gerslautern, Fenne, and Saarbrücken but no long-distance supplies.

Solid Fuels

Röchling

Völklingen

(2)

The coking plant belonging to the iron and steel works of the Röchling'sche Eisen & Stahlwerke G.m.b.H. has 216 ovens and an annual rated dry-coal capacity of 1,100,000 tons.

Iron and Steel

Röchling

Völklingen

(1)

The works of the Röchling'sche Eisen & Stahlwerke G.m.b.H. & Edelstahlwerk Röchling occupy a large area in the centre of the town. They include 7 blast furnaces, 1 electric furnace, and 5 basic steel furnaces. The capacity of the plant is 650,000 tons of pig iron and 750,000 tons of crude steel per annum. It also has a large output of special steel. The works produce armour plate, girders and rails, sheet iron, and wire. There is also said to be a small production of shells, spare parts for aircraft and steel for tool making. In 1942 some 7,500 workers were reported to be employed.

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WALCHENSEE (Bavaria)

47° 40' N. 11° 20' E: 590 miles: (-)

Walchensee is a small village on the Western shore of the Walchen See, 45 miles South of Munich in the Bavarian Alps. There is an important hydro electric scheme at Walchensee.

Public Utility Services

Hydro Scheme

Walchensee (1)

The Walchensee hydro scheme, which was built in 1924, uses the water power of the Walchen See and the Kochel See, one mile to the North. There is a 670 ft. head between these two lakes. The natural inflow of the Walchen See is augmented by obstructing part of the water of the river Isar by means of a diversionary canal from Krünn 6 miles South of Walchensee to the Southwestern corner of the lake. Between the two lakes the water flows for $\frac{3}{4}$ mile through a tunnel. The penstock leading into the Kochel See is 1,430 ft long and comprises 6 pipe lines tapering in diameter from 7 $\frac{1}{2}$ ft. at the top to 6 ft at the bottom. The installed capacity of this hydro-electric station is 124 MW. It contains special generating plant for supply to the German State Railways, as well as plant for general supply. Water supply is at a maximum in spring, when the snow melts, and at a minimum during the frosts of winter.

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WALDECK (Hesse Nassau)

51° 10' N. 9° 5' E: 410 miles: (1,000)

Waldeck is 20 miles South-west of Kassel in the valley of the River Eder. Immediately to the South of the village is the Edersee, a large reservoir made by damming the River Eder, which provides the water power for the important hydro electric scheme described below.

Public Utility Services

Hydro Scheme

Waldeck (1)

This electric power scheme is based on the damming of the River Eder, an undertaking which was first put into operation in 1914. The dam near Waldeck impounds 202 million tons of water in the Edersee, and serves three main purposes, namely: to store water for improving navigation on the River Weser, to control flood waters, and to supply power for electricity. There are 4 generating stations. The Hemfurth I station near the Edersee dam has a capacity of 14 MW. Hemfurth II, one mile downstream, which is equipped with pumped-storage plant, has a capacity of 18 MW. To compensate for the irregular flow through the turbines of the two Hemfurth stations,

/a weir

WALDECK (Continued)

a weir, the Affoldern, 3 miles downstream, has been built to create a compensating reservoir. The generating station at Affoldern has a capacity of 3 MW. Finally, in 1933, a large pumped-storage station was built on the bank of the Affoldern compensating reservoir which was used as a lower reservoir, the upper reservoir being artificially constructed on the flat top of the Peterskopf Mountain in the Bringhausen Forest. This generating station, known as the Bringhausen station, has a capacity of 120 MW and is used for meeting peak loads and emergencies. The Bringhausen pumped-storage system is one of the largest of its kind. The upper reservoir is 980 feet above the generating station, and has an effective water content of 760,000 tons. The penstock consists of two parallel pipes 3,150 feet long, tapering in diameter from 8 feet at the top to 7 feet at the bottom. There is an adjoining table railway.

The Eder dam was breached by air attack in May 1943 and the reservoir largely depleted of water, while the power stations escaped serious damage. The reservoir has since been drained as part of the reconstruction work now in progress.

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WALDENBURG (Silesia)

50° 45' N. 16° 15' E: 710 miles: (65,000)

Waldenburg lies 40 miles South-west of Breslau on a railway line leading from Breslau via Glatz through the Southern corner of Lower Silesia to Czechoslovakia. Waldenburg is the chief mining centre in the Lower Silesian coalfield. The deposits cover a wide area extending to the West as far as Oppau, and to the South-east as far as Wanschelburg on the former Czechoslovakian frontier. The two principal firms exploiting these deposits are mentioned below. There is also a chemical works connected with the coking plant belonging to these mines which was closed in 1932, but which may have resumed operations. The thermal electric-power plant belonging to the Niederschlesische Bergbau A.G. is described below under Public Utilities. The other industries of Waldenburg are chiefly the manufacture of glass and porcelain.

Public Utility Services

Glückhilmf

Nieder Hermsdorf (2)

The Glückhilmf thermal electric-power station is situated in Nieder Hermsdorf, a South-western suburb of Waldenburg. It is owned by the Niederschlesische Bergbau A.G., whose coal mines are mentioned below. This power station has a capacity of 74 MW.

It is known that a cable was laid to connect the station to the projected 220-kV line at Tschechnitz. The line is planned to run from the industrial area of Silesia via Trattendorf and Golpa to link up with the main 220-kV line between Berlin and the Ruhr. A 100-kV line runs from Glückhilmf to

/Liegnitz

WALDENBURG (Continued)

Liegnitz.

Gasworks

Waldenburg

(3)

The Gaszentrale Niederschlesian G.m.b.H. has its main distributing centre at Waldenburg. It draws gas from the coking plants of the Niederschlesische Bergbau A.G., and supplies Waldenburg and some 20 other places. Total sales in 1936 were 1,050 million cu. ft.

Solid Fuels

Niederschlesische Bergbau A.G.

Waldenburg

(2)

The Niederschlesische Bergbau A.G. are the largest coal-mining concern in the Waldenburg area. They own several pits in the district the majority of which are grouped to the North-west of the town. They are as follows: the Fuchsgrube at Weissstein to the North-west, the Davidgrube in Konradsthal, the Seegen Gottes Grube in Altwasser, the Glückhilf-Friedenshoffnung in Nieder-Hermsdorf to the South-west, (this pit has its own power station described above under Public Utilities), and the von Kulmizgrube in Dittesbach to the South-east. The company owns three coking plants, of which the largest is at Nieder-Hermsdorf. The total output of all the above mines was 3,200,000 tons per annum in 1937. The coking plants have an annual rated dry-coal capacity of 650,000 tons. Some 11,000 workers were employed by the Niederschlesische Bergbau A.G. in 1937.

Waldenburger Bergwerks A.G.

Waldenburg

(3)

The Waldenburger Bergwerks A.G., with which are incorporated the pits of the former Fürst von Pless concern, own three coal mines to the South-east of Waldenburg. These are the Fürsteiner, the Hans-Heinrich, and the Marie-Schacht mines. The Fürsteiner mine includes a coking and by-products plant. The output of these three mines was 1,500,000 tons in 1937. The coking plant has an annual rated dry-coal capacity of 210,000 tons. Some 4,700 workers were employed by the Waldenburger Bergwerks A.G. in 1937.

Engineering and Armaments

Carlshütte G.m.b.H.

Waldenburg &
Altwasser

(3)

The Carlshütte Maschinen-und Stahlbau Gesellschaft m.b.H. are makers of coal-cleaning and coal-grading plant. The firm is associated with Klöckner-Humboldt-Deutz A.G. of Köln-Deutz. The number of employees before the war was 1,000.

WALDSHUT (contd.)

Hydro Scheme (contd.)

The scheme has been jointly developed by the German and Swiss Governments. The total installed capacity is 447 MW, of which the German share is 224 and the Swiss 223 MW.

Hydro Scheme Schluchsee (1)

The Schluchsee hydro scheme in the Black Forest is designed for an ultimate capacity of approximately 400 MW. When fully developed it will use the 1,970 ft. head between the Schluchsee lake and the River Rhine at Waldshut, a distance of 12 miles. The work was planned in three stages. Stage one included the damming of the Schluchsee, creation of a reservoir of 108 million tons capacity, and the building of a pumped-storage station at Häusern for a head of 660 ft. Stage two was the building of a pumped-storage station at Witznau for a head of 950 ft. Stage three, which is still projected, is the building of a pumped-storage station at Waldshut for a head of 380 ft. Below Häusern and Witznau generating stations there are two reservoirs of 1.3 and 4.5 million tons capacity respectively, to serve as daily and weekly storage basins. In 1929 construction was begun on the first stage (Hausern) and on a provisional compensating station at Eichholz. This work was completed in 1933, the installed capacity of the generating plant at Hausern being 104 MW. and at Eichholz 30 MW. In 1938 construction was begun on the second stage (Witznau), the intention being to close down Eichholz when this was completed. It is believed that this work was finished in 1942, the installed capacity of the generating plant at Witznau being approximately 176 MW, and the total for the scheme as then developed 280 MW. The scheme provides for maximum output in the winter months, and is designed to compensate for the reduced output of the Upper Rhine stations when the Alpine water supplies are frozen. The projected pumped-storage station, which has yet to be built at Waldshut, is planned to have a capacity of 100 MW.

Substation Tiengen (-)

The precise position of this important substation is unknown. It is the main collecting point for the surplus output of the Upper Rhine and Schluchsee water-power scheme, and is also the terminus of the 380/220 kV long-distance line connecting the hydro-electric stations of the Upper Rhine and Vorarlberg to the Ruhr industrial area via Herbertingen, Hoheneck, Rheinau, Kelsterbach, Koblenz, and Brauweiler substations, a distance by this route of 360 miles. Three 110 kV lines connect to Albbbruck-Dogern, and two connect possibly to Klingau, two to Häusern power station, and two possibly to Berau switching station.

/Chemicals

WALDSHUT (contd.)

Chemicals and Explosives

Lonza

Waldshut (3)

The Lonza Elektrochemische Fabriken G.m.b.H. are a subsidiary of the Swiss company of the same name at Gampel. These works manufacture carbide and cyanamide. The cyanamide capacity in 1938/39 was 20,000 tons of nitrogen. The production in 1938 was estimated at 14,000 tons of nitrogen. This factory has also been reported as manufacturing liquid for flame-throwers. The works is located 2,500 yards East of the Waldshut railway station. Some 1,500 workers are believed to be employed.

Aircraft and Aero Engines

Aircraft Works

Wutöschingen (-)

It has been reported that at Wutöschingen, 7 miles to the East of Waldshut, an aircraft-components works has been erected. The number of workers engaged there has been stated to be as high as 5,000. It seems probable that this report, which has not been confirmed, refers to the non-ferrous metal plant, described below.

Non-Ferrous Metal Manufacture and Fabrication

Aluminium Walzwerk

Wutöschingen (2)

The Aluminium Walzwerk Wutöschingen G.m.b.H. are important manufacturers of a variety of light-metal alloys and aluminium products, including sheet, strip, circles, sheet sections, and drawn sections, rods, wire, rivets, shaped sections, forgings and blooms. Reports suggest that a variety of semi-finished aircraft components are produced.

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/WALSRODE

WALSRODE (Hanover)

52° 45' N. 9° 35' E: 4.20 miles: (6,000)

Walsrode is in the "Lüneburger Heide, 35 miles North of Hanover, on a branch railway line running North from Hanover to join the Stendal-Bremen line, 6 miles North of Walsrode. Walsrode is the junction for a second minor branch line running from Verden to Soltau. It is a market centre for the surrounding agricultural district and contains the important explosives factory described below.

Chemicals and Explosives

Wolff & Co.

Bömlitz (2)

This factory is operated by Wolff & Co. K.G. a subsidiary of the I.G. Farben concern. It produced nitro-cellulose during the 1914-1918 war (at the rate of 369 tons monthly) and was allowed to continue the manufacture of explosives, concentrating on the production of smokeless powder. From 1938 onwards considerable extensions have been made to the plant and to the number of persons employed there. A variety of reliable reports puts the 1943 pay-roll at between 13,000 and 15,000. On the assumption that this is primarily a propellant-powder plant, a production of about 40,000 tons a year is indicated. The factory is situated at Bömlitz, 5 miles N.N.E. of Walsrode.

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WALTERSHAUSEN

WALTERSHAUSEN (Thuringia)

49° 55' N. 10° 35' E: 470 miles: (10,000)

Waltershausen lies 8 miles West of Gotha on a branch line which leaves the main Erfurt-Frankfort/Main line 2 miles North of the town. In peacetime, like Sonneberg, Waltershausen specialises in the making of dolls and other toys, and this forms the chief industry. There are, however, factories making woven hosepipes, which are now of some importance.

Rubber and Tyres:

Schlauchweberei Waltershausen (3)

The Thuringer Schlauchweberei & Gummiwerke A.C. are manufacturers of woven fire-hoses and other rubber articles. Before the war they employed some 400 workers.

Adloff Tabarz (3)

The C.A.Adloff Gurt Schlauchweberei & Gummiwarenfabrik have a range of products similar to the firm mentioned above. Tabarz, which has 2,000 inhabitants, lies 2 miles South-west of Waltershausen.

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WANNE-EICKEL (Westphalia)

51° 30' N. 7° 10' E: 310 miles: (89,000)

The area here covered is roughly the administrative district of Wanne-Eickel. The southern boundary lies about 2½ miles North-west of Bochum and the area extends to the Rhine-Herne canal. Gelsenkirchen adjoins it in the West and Herne in the East.

Industry in this area is almost entirely concerned with the mining of coal and the production of coke. There are also a synthetic oil and a synthetic ammonia plant. There is a large marshalling yard North-east of Wanne.

Transportation

Marshalling Yards Wanne (2)

These yards lie immediately to the North-east of Wanne station and extend about 1 mile in length; their capacity is 5,200 wagons per 24 hours.

Twin locks Rhein-Herne Canal (3)

This is the 5th set of twin locks on the Rhein-Herne canal. They are located 1¼ miles off Wanne station.

/Public Utility

WANNE-EICKEL (contd.)

Public Utility Services

Hannibal Power Station Eickel (3)

This power station is located at the Hannibal Colliery $1\frac{1}{2}$ miles South-east of Wanne station. It is owned by Krupp Treibstoffwerke G.m.b.H. and its principal function is to supply current to the nearby synthetic-oil plant, (see under "Liquid Fuels"). The capacity of the plant is estimated at 39 MW.

Hanover Power Station Hordel (5)

Owned by Fr. Krupp, the power station is situated adjoining the Hanover coking plant, $1\frac{1}{2}$ miles South of Wanne station. The capacity is estimated at 20 MW.

Gasworks Wanne-Eickel (3)

The V.E.W. gasworks draws supplies from the Krupp coking plant at Bochum-Hordel. In 1936 it sold 125 million cu.ft.

Solid Fuels

Hanover coking plant Hordel (3)

Situated $1\frac{1}{2}$ miles South of Wanne station, the plant is owned by Fr. Krupp A.G. There are 73 ovens having an estimated annual dry coal capacity of 434,000 tons. Gas is supplied to the Ruhr gas grid. The plant supplies metallurgical coke to Krupp's works at Essen.

Shamrock $3/4$ coking plant Wanne (3)

Situated $\frac{1}{4}$ mile East of Wanne station and adjoining the Shamrock colliery, the plant is owned by Bergwerkgesellschaft Hibernia A.G. There are 100 coking ovens having an estimated annual dry coal capacity of 710,000 tons. Gas is supplied to the Ruhr gas grid.

Hannibal coking plant Eickel (3)

Owned by Fried. Krupp A.G. the coking plant adjoins the Hannibal colliery $1\frac{1}{4}$ miles South-east of Wanne station. There are 100 ovens having an estimated annual dry coal capacity of 290,000 tons.

/Shamrock $3/4$

WANNE-EICKEL (contd.)

Shamrock 3/4 Colliery Wanne (3)

The Colliery is owned by Bergwerk-
gesellschaft Hibernia A.G. and is
situated adjoining the coke ovens
 $\frac{1}{4}$ mile East of Wanne station. In
1937 the output of hard coal amounted
to 1,028,000 tons.

Hannibal Colliery Eickel (3)

Situated at Eickel $1\frac{1}{4}$ miles South-east
of Wanne station, and adjoining the
synthetic oil plant, it is owned by
Fr. Krupp A.G. In 1937 the output
of hard coal amounted to 1,060,000
tons.

Liquid Fuels

Krupp Synthetic Oil Plant Eickel (3)

This Fischer-Tropsch synthetic-oil
plant is owned by Krupp Treibstoffwerke
G.m.b.H. and is situated adjoining
the Hannibal power station and coking
plant, $1\frac{1}{4}$ miles South-east of Wanne
station. Capacity is estimated at
150,000 tons of oil products per annum,
and storage capacity at 14,500 tons.
The products of the plant are petrol,
gas-oil, and lubricants.

Engineering and Armaments

Wilhelm Knapp Wanne-Eickel (3)

Maschinenfabrik Wilhelm Knapp G.m.b.H.
produces pneumatic tools and machines,
and also ventilation equipment for
mines.

Chemicals and Explosives

Hibernia synthetic-ammonia plant Holster-hausen (3)

The synthetic-ammonia plant is owned by
Bergwerkgesellschaft Hibernia A.G. and
is situated $1\frac{1}{2}$ miles East of Wanne station.
The Mont Genis process is used; hydrogen
is obtained from coke-oven gas and nitrogen
from the air by the Linde process. The
capacity of the plant is estimated at
40,000 metric tons of nitrogen per annum.
Power is obtained from the R.W.E. grid.

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/WAREN

WAREN (Mecklenburg)

53° 30' N. 12° 40' E: 560 miles: (16,000)

Waren is on the railway from Berlin to Rostock, 20 miles North-west of Neustrelitz. It is on the Northern shore of the Mritzer See, and is a marketing centre for the surrounding agricultural district. Apart from a few minor engineering works, the only firm of note is the non-ferrous metal plant described below.

Non-Ferrous Metal Manufacture and Fabrication

Metallwarenfabrik Waren (2)

The Mecklenburgische Metallwarenfabrik m.b.H. have a branch works situated immediately to the South of Waren. The plant is of modern construction and is believed to employ some 2,000 workers on the manufacture of duralumin products. The works include a foundry and a large rolling mill.

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WARNEMÜNDE (Mecklenburg)

54° 10' N. 12° 5' E: 545 miles: (11,000)

Warnemünde is 6 miles North of Rostock, where the river Warnow, after widening into a large lagoon (Der Breitling), is connected with the Baltic by a narrow channel through the tongue of land on which Warnemünde is built. Warnemünde serves as an advance port for Rostock, and in peacetime is a holiday resort. The important train-ferry service operates between Warnemünde and Gjedser in Denmark. Prior to the war it carried 200,000 persons and 250,000 tons of goods per annum; this service is now being used to maintain the armed forces in Norway and Finland.

The port area is in constant use by minor naval units and other light craft as a base for exercising in the Baltic.

The branch factory of the Arado Flugzeugwerke is situated to the south of the town.

Transportation

Train-ferry Landing Warnemünde (2)

The landing consists of 2 berths each with a draw-bridge and raising gear to convey trains on to the ferries. There are 3 special train-ferry ships, of approximately 1,600, 2,800 and 3,200 tons respectively. The length of the route is 40 km, and the time of crossing 2 hrs 10 mins.

/Aircraft

WARNEMÜNDE (Mecklenburg) (contd.)

Aircraft and Aero Engines

Arado

Warnemünde (2)

The latest available information on this branch works of the Arado Flugzeugwerke G.m.b.H., the parent factory of which is at Brandenburg an der Havel, indicates that the chief present activity is the manufacture of engine frames and cowlings and the mounting of B.M.W. 801 engines for shipment, as complete power units, to the final assembly plant. In addition fuselage work, which had ceased as a result of bomb damage, has been resumed. The plant was formerly mainly engaged on the Arado 196 and had a monthly output of 15 aircraft, but there is now evidence (still somewhat conflicting) that the present fuselage work is connected with FW.190.

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WASSERALFINGEN (Wurttemberg)

48° 50' N. 10° 5' E: 480 miles: (5,000)

Wasseralfingen lies in the Eastern part of Wurttemberg, 30 miles East of Stuttgart, and on the railway from Stuttgart, to Nordlingen.

Hüttenwerke G.m.b.H.

Wasseralfingen (3)

The Schwabische Hüttenwerke G.m.b.H. are iron founders and specialise in the manufacture of slow-combustion stoves. The firm is associated with the Gutehoffnungshütte of Oberhausen, and has several branch works in Southern Germany. Before the war a total of some 1,800 workers were employed.

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WATTENSCHIED (Westphalia)

51° 30' N. 7° 05' E: 310 miles: (62,000)

The district of Wattenscheid is bounded in West by Essen, in the North by Gelsenkirchen, and in the East by Bochum. Industry here is mainly concerned with the production of coal and coke.

/Solid Fuels

WATTENSCHIED (Westphalia) (contd.)

Solid Fuels

Centrum-Morgensonne coking plant Wattenscheid (3)

Owned by Rheinische Stahlwerke A.G. the coking plant is situated adjoining the Centrum pit, 1 mile East of Wattenscheid station. There are 43 ovens having an estimated annual dry coal capacity of 206,000 tons. Gas is supplied to the Ruhr gas grid.

Rheinische Stahlwerke Collieries Wattenscheid (3)

Centrum Pits 1/3/8 are situated about 1 mile East of the station and Frohliche Morgensonne about 1/2 mile South of the station; both are owned by Rheinische Stahlwerke A.G. The combined output in 1936 amounted to 1,206,000 tons of hard coal.

Holland 3/4 Colliery Wattenscheid (3)

Owned by Gelsenkirchener Bergwerks A.G. The colliery is situated 1 mile North-west of the station. In 1936 the output of hard coal amounted to 1,211,000 tons.

Liquid Fuels

Centrum tar distillation plant Wattenscheid (3)

Owned by the Rheinische Stahlwerke A.G. the plant is situated adjoining the colliery (see above). Output is estimated at 11,000 tons of tar distilled per annum.

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WEIDA (Thuringia)

50° 45' N. 12° 5' E: 530 miles: (12,000)

Weida is on a branch railway line 8 miles South of Gera. The manufacture of leather goods is the chief industry of the town, and there are also a number of small textile mills.

Leather

O. & A Dix A.G. Schlossmuhlenweg }
Franz Prasse. Pfortenstr. } (-)

The above are the two largest of four leather factories in Weida, making chiefly upper leather, equipment and saddlery leather, box calf, and side and fancy leathers. Dix employed some 700 and Prasse some 300 workers before the war.

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WEIDEN (Bavaria)

49° 40' N. 12° 10' E: 555 miles: (28,000)

Weiden lies in the North of Bavaria on the main line from Hof to Regensburg. It is the junction for a branch line leading North-westwards to Bayreuth. The principal industries are glass and porcelain, but apart from the firm mentioned below, none is individually of importance. There are important railway-repair shops.

Transportation

Railway Repair Shops Weiden (3)

These large railway-repair shops are North of the main railway station. They employed some 1,200 workers in 1938 and undertook the repair and maintenance of locomotives, passenger coaches, and goods wagons.

Engineering and Armaments

Detag Weiden (-)

The Deutsche Tafelglas A.G. (Detag), the parent works of which are in Fürth, have a large branch factory in Weiden which makes various kinds of sheet glass. This company, which has also branch factories in Niederlausitz and the Ruhr, employed approximately 1,000 workers before the war.

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WEIMAR (Thuringia)

51 N. 11 20' E: 500 miles: (58,000)

Weimar lies on the main railway line from Berlin to Frankfurt/Main via Halle and Erfurt. It was formerly the capital of a small principality and is now the chief town of the Province of Thuringia. The Fritz Sauckel Werke, which are described below, are large producers of armaments, and their expansion in recent years has given Weimar a high order of importance to the German war machine. There are a number of other engineering works which normally make machinery for the textile and chemical industries, electrical apparatus, and fire-fighting equipment. There is also a large uniform factory. Several of the industries, including the Frits Sauckel works, are situated close to the main railway station in the Northern quarter of the town.

/ Engineering

Weimar (contd.)

Engineering and Armaments

Fritz Sauckel

Weimar

(2)

The Berlin-Suhler Waffen- & Fahrzeugwerke (Fritz Sauckel Werke) are important makers of small arms and of armoured military transport, such as self-propelled gun carriages. Their plant has been greatly expanded during the war and 6,000 workers are now reported to be employed. The works are situated on the Northern side of the town immediately East of the main railway station.

Among the equipment reported as being built in Weimar are rotary excavators, heavy projecting apparatus for rocket torpedoes, and a caterpillar-tracked armoured vehicle carrying 6 rocket "Wurfgeräte" and one A.A. gun.

Motoren & Maschinenbau

Weimar

(3)

The Motoren & Maschinenbau G.m.b.H. are makers of textile machinery, vacuum pumps, carburetors, and high-pressure compressors. Their works are on the Western side of the main railway station.

Böhrling A. G.

Weimar

(3)

The Apparatebau A.G. Böhrling are makers of machinery for the textile and chemical industries. Their factory is near the railway station on the Western side of the Motoren & Maschinenbau G.m.b.H. mentioned above.

Dittmann

Schwannseestr.

(3)

The Waldemar Dittmann Maschinenbau & Vertrieb are makers of fire-fighting pumps, A.R.P. equipment, paint sprays, and similar apparatus.

Textiles, Rayon, Pulp and Paper

Uniform-Werkstätten

Weimar

(3)

The Weimarer Uniform-Werkstätten G.m.b.H. are manufacturers of all kinds of military uniforms. Their factory employed several hundred workers before the war.

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/ WEINHEIM

WEINHEIM (Baden)

49° 35' N. 8° 40' E:

410 miles: (18,000)

Weinheim lies on the railway which runs through the fruit-growing district on the Western slopes of the Bergstrasse from Darmstadt via Heidelberg to Karlsruhe. The industries are chiefly connected with the leather and rubber industries, and also include glass and porcelain works and a small soap factory.

Leather

Carl Freudenberg

Weinheim (2)

The Carl Freudenberg Simmerwerke are specialists in leather and artificial oil-seals and washers. They also make upper leather. A second factory in Weinheim belonging to this firm makes artificial sausage skins. The company is reported to employ some 3,000 workers.

Hirsch G. m. b. H.

Weinheim (3)

The Lederwerke Sigmund Hirsch G. m. b. H. manufacture box calf, chrome, and horse-hide leather products. They employed some 500 workers before the war. Hirsch is an affiliated company of Carl Freudenberg.

Rubber and Tyres

Weisbrod & Seiffert

Weinheim (3)

The Weinheimer Gummiwarenfabrik Weisbrod & Seiffert m. b. H. produce conveyor and driving belts, and all kinds of industrial hose. They are also producers of cycle tyres. Normally some 300 workers are employed.

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WEISSENFELS (Province Saxony)

51° 10' N. 12° E:

550 miles: (41,000)

Weissenfels is on the main line from Berlin to Frankfurt am Main via Halle and Erfurt, and the junction for a branch line leading to Zeitz. Weissenfels is in an important brown-coal mining district, and the principal mines are mentioned below. The Gross-Kayna mines provide fuel for the adjacent thermal power station. The other industries of Weissenfels include boot and shoe manufacture, flour milling, iron ware, and a few small engineering works.

/ Transportation

WEISSENFELS (contd.)

Transportation

Marshalling Yards Weissenfels (3)

These marshalling yards are capable of handling up to 2,400 wagons per 24 hours.

Railway Repair Shops Weissenfels (3)

These are medium-sized repair shops undertaking mainly the repair of goods wagons.

Solid Fuels

Michel & Vesta Gross Kayna (3)

These two open-cast brown-coal mines belong to the Michel-Werke of Halle. The combined output in 1937 was 2,650,000 tons and the briquetting plant had an output of 800,000 tons. Some 1,500 workers were employed.

Leonhardt Mine Neumark (3)

The Leonhardt brown-coal mine of the Michel-Werke had an output in 1937 of 500,000 tons and the briquetting plant of 100,000 tons. Some 400 workers were employed.

Gutehoffnung Mine Rossbach (3)

The Gutehoffnung brown-coal mine of the Michel-Werke had an output in 1937 of 600,000 tons and the briquetting plant of 160,000 tons. Some 500 workers were employed.

Public Utility Services

Electric Power Station Gross Kayna (2)

This thermal power plant, which is the main station of the Elektrizitätswerk Sachsen-Anhalt A.G., has a capacity of 56 MW, and is in the small town of Gross Kayna, 5 miles North of Weissenfels. The fuel used is brown coal, which is obtained from the adjacent open-cast mine. Power is

/ supplied

WEISSENFELS (contd.)

supplied to a large briquetting plant which adjoins this station, and it is thought probable that the large chemical and synthetic-oil plants at Leuna near Merseburg (5 miles North of Gross Kayna) also obtain power from this station.

Engineering and Armaments

Hoddick & Röthe G.m.b.H. Weissenfels (-)

This firm manufactures pumps and compressors, and in peacetime employed 100 workers.

Leather

Emil Blasig A.G. Weissenfels (-)

The above is an example of a number of small firms manufacturing boots and shoes. The Emil Blasig A.G. employed 150 workers before the war.

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WEISSIG (Saxony)

51° 20' N. 13° 25' E: 580 miles: (1,000)

Weissig lies 5 miles East of Riesa on the railway line from Riesa to Dresden. It is the railway station for Nünchritz, a small settlement on the right bank of the Elbe with 3,000 inhabitants before the war, where there is a branch factory of the von Heyden chemical works of Radebeul.

Chemicals and Explosives

Von Heyden A.G. Nünchritz (3)

This branch works of the Chemische Fabrik von Heyden A.G. of Radebeul, which is known as the "Werk Weisseg", was erected in 1901 as a sulphuric-acid plant. The works was reported in 1943 to be producing phenol for synthetic resin.

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/ WEISSTEIN

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WEISSTEIN (Silesia)

50° 45' N. 16° 15' E: 710 miles: (17,000)

Weisstein lies on a branch railway 5 miles North-west of Waldenburg and is in the coal-mining area of Lower Silesia. The principal coal mines in this district are dealt with separately under Waldenburg. The only industry in Weisstein is the making of boots and shoes. There are no firms of individual importance.

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WENZENDORF (Hanover)

53° 20' N. 9° 45' E: 440 miles: (500)

Wenzendorf is a small village 14 miles to the South-west of Hamburg and 3 miles North-west of Buchholz, a station on the Hamburg-Bremen line. It gives its name to the adjacent G.A.F. airfield. The aircraft section of the Blohm & Voss shipbuilding concern is reported to have established a storage and components-assembly plant at Wenzendorf.

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W E R D A U (Saxony)

50° 45' N. 12° 25' E: 545 miles: (22,000)

Werdau lies 6 miles West of Zwickau and on the main railway line from Leipzig to Plauen. It is the junction for a branch line which leads via Zwickau to Chemnitz. The manufacture of measuring and precision instruments is a speciality of the town and Werdau has become a production centre of some importance in this branch. The two principal works are described below, but there are also a number of smaller firms engaged in the industry which are estimated to employ approximately 1,000 additional specialist craftsmen. A factory making textile machinery and other examples of the engineering works in Werdau are also described below. Werdau has a considerable textile industry represented by some 20 mills which, though individually of small size, made up a large aggregate production before the war. Their present activity is not known but it is believed to be very limited.

Transportation

Railway Junction Werdau (2)

Werdau is in the centre of the highly-industrialised district of Saxony, and is the junction for two important lines. It lies on the main North to South route via Leipzig, Werdau, Plauen and Hof. A branch line leading from Dresden via Chemnitz and Zwickau joins this main route to the South of Werdau and forms a direct connection between Dresden and Bavaria. Two minor branch lines lead Westwards from Werdau.

/Railway

WERDER (Brandenburg)

52° 25' N. 12° 25' E: 560 miles: (10,000)

Werder, on the River Havel, is 20 miles South-west of the centre of Berlin. Normally its main activity is connected with the canning and preserving industry, particularly of the fruit grown in this neighbourhood. Several of the firms engaged on this work are now supplying the armed forces. New works for the manufacture of plastics have recently been erected in Werder. To the South-west there is an aerodrome, which has been extended during the war.

Aircraft and Aero Engines

Martin Schmid Werder (-)

The Vulkanfiber-Fabrik Martin Schmid, the headquarters of which are in Berlin, have erected a branch factory at Werder which is now reported to be making aircraft components of plastics. Some 300 workers are said to be employed.

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WERDOHL (Wesphalia)

51° 15' N. 7° 50' E: 345 miles: (13,000)

Werdohl is one of a chain of industrial settlements along the valley of the river Lenne, which are engaged in steel-rolling and metal-working of all kinds. The three larger plants in Werdohl are described below. There are in addition several smaller factories and workshops engaged in wire-drawing, nail-making, and other light metal-work.

Engineering and Armaments

Brüninghaus A.G. Werdohl (2)

The Stahlwerke Brüninghaus A.G. are important producers of steel springs, in particular for railway rolling-stock. This company, which is a subsidiary of the Vereinigte Stahlwerke A.G. of Düsseldorf, employed some 1,500 workers before the war, but is now thought to have been considerably enlarged. A recent report states that these works are one of the three most important suppliers of these products, the others being the Hoesch plant at Hohenlimburg and Dittmann-Neuhaus at Herbede. These three factories are believed to supply the German railways with practically their entire requirements of springs.

Thomee A.G. Werdohl (3)

Friedrich Thomee A.G., a subsidiary of the Vereinigte Stahlwerke A.G. of Düsseldorf, manufactures girders, iron and steel constructions, profiles, banks, and wire products. The factory, which comprises a large rolling-mill and wire-drawing plant, employed some 500 workers before the war.

/V.D.M.

WERDOHL (contd.)

V. D. M.

Werdohl

(3)

The Vereinigte Deutsche Metallwerke A.G. whose headquarters are in Frankfurt/Main, have branch works at Werdohl which include a foundry and rolling mills processing non-ferrous metals and produce sheet metal, profiles, rods and bands. The Werdohl plant is believed to be the smallest of the V.D.M. works.

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WERNIGERODE (Province Saxony)

51° 50' N. 10° 45' E: 470 miles: (23,000)

Wernigerode lies on a branch line from Halberstadt to Goslar, 10 miles South-west of Halberstadt. It is normally an agricultural marketing centre, but has now attained some importance through the development into a large-scale undertaking of the metal working plant described below.

Non-Ferrous Metal Manufacture and Fabrication

R. Rautenbach

Wernigerode

(2)

The main works of the Rudolf Rautenbach G.m.b.H. are in Solingen. The Wernigerode plant was originally built as a shadow factory with a complement of 800 workers employed on the manufacture of light-alloy castings. This factory has, however, been greatly extended during the past few years, and is now reported to employ some 4,000 workers. Among the products of these works are crankcases for B.M.W. aero-engines. It is believed that the crankcases are sent to the main works of this firm at Solingen. The Wernigerode plant includes three Siemens electric melting furnaces, and 30 smaller furnaces.

Kupferwerk Ilsenburg A.G.

Ilsenburg-Harz

(3)

Wernigerode

This company own smelters and refineries used chiefly for the treatment of scrap. Their refinery capacity is estimated at 10,000 tons per annum for electrolytic refining and 14,000 tons per annum for fire-refining.

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/WERTHEIM

WERTHEIM (Baden)

49° 45' N. 9° 30' E: 450 miles: (4,000)

Wertheim lies on the River Main in the extreme Northern part of Baden and 20 miles West of Würzburg. Apart from the explosives factory mentioned below, there is no industry of importance.

Chemicals and Explosives

Hasloch Wertheim (3)

The factory of the Pulverfabrik Hasloch G.m.b.H. made small quantities of nitro-cellulose powder for military purposes in the last war and was licenced to continue manufacture of sporting powders in the peace years at the rate of 49 tons per month. It is fairly reliably established that the plant was making 10 tons of nitro-cellulose daily in 1942. This large increase of output suggests that this production is now used for military purposes.

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WESEL (Rhineland)

51° 40' N. 6° 40' E: 290 miles: (25,000)

Wesel lies on a railway line leading from the Ruhr to Holland. It is a junction for Münster, Osnabrück and Bocholt. Wesel is an important agricultural marketing centre. There are a number of small engineering works, of which none is of individual importance.

Transportation

Railway Repair Shops Wesel (3)

These repair shops undertake mainly the repair and maintenance of goods wagons. Adjacent to the workshops are goods and marshalling yards.

Public Utility Services

Electric Power Station Wesel (-)

The Kraftwerk Niederrhein, also known as the Wesel & Obeighofen power stations, is of the thermal type and has an installed capacity of 15 MW.

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/WESSELING

WESSELING (Rhineland)

50° 49' N. 7° E: 280 miles: (6,000)

Wesseling lies 8 miles South of Cologne on the left bank of the river Rhine. It is on the railway line between Cologne and Bonn. The normal industries of the town included some light engineering, leather, and chemicals. The harbour on the Rhine is a coal-loading station for the brown-coal mines in the vicinity. The synthetic-oil plant is a wartime development and is the principal industrial establishment in the Wesseling area.

Public Utility Services

Power Station Wesseling (2)

This thermal generating station forms part of the synthetic-oil plant of the Union Rheinische Braunkohlen-Kraftstoff A.G. It has an installed capacity of 60 MW but it is believed that this capacity will be doubled by 1944/45. (See also under Liquid Fuels).

Liquid Fuels

Synthetic Oil Plant Wesseling (2)

The Union Rheinische Braunkohlen-Kraftstoff A.G. hydrogenation plant lies one mile due East of Wesseling on the left bank of the Rhine. The Berguis process is used. The plant is believed to have come into production in 1941 and it was then credited with an annual production of 25,000 tons. Maximum capacity, believed to be of the order of 200,000 tons per annum is believed to have been achieved in 1942 but in the course of 1943 a number of circumstances are believed to have been responsible for a decline in output to 100,000 tons per annum. 1944 estimates rate the plant as again working at full capacity i. e. 200,000 t.p.a.

Engineering and Armaments

Feldmühle Papier & Zellstoffwerke A.G. Wesseling (2)

The Wesseling branch factory of this large concern is considered to be one of the principal German manufacturers of aluminium-oxide abrasives including paper and cloth abrasives. The factory is known as Werk Koholyt-Wesseling and covers an area of 156,670 square metres on a site of 419,210 square metres. It has its own switching and transformer station obtaining power from the R.W.E. grid.

Baunswerke A.G. Wesseling (3)

This firm is reported to build bridges and components for narrow-gauge locomotives.

/Chemicals

WESSELING (contd.)

Chemicals and Explosives

Chemische Fabrik Wesseling A.G. Wesseling (3)

Sulphuric acid and various ferro-cyanide and ferric oxide compounds are manufactured here particularly for dyestuffs. Bleaching powder is also produced. The firm owns a second plant in Neuss.

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WESTERLAND (Schleswig Holstein)

54° 50' N. 8° 20' E: 420 miles: (4,000)

Westerland is on the Island of Sylt off the West coast of the Danish Peninsula, and is connected with the mainland of Schleswig-Holstein by the Hindenburg railway dam. In peacetime Westerland is chiefly a health resort. There are reports that an important aircraft-repair station is now established at Westerland.

Aircraft and Aero Engines

Repair Works Westerland (3)

A large aircraft-repair station is established at Westerland which in 1942 was reported to be employing 1,500 workers.

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WETZLAR (Hesse Nassau)

50° 35' N. 8° 30' E: 380 miles: (26,000)

Wetzlar, which is in the valley of the river Lahn 7 miles West of Giessen, is an important town in the German optical-instrument industry. The Leitz concern which, next to Zeiss, is the largest unit in this branch, has its parent works in the town, and there are several smaller works also making optical instruments and components. As is the case with Jena, this industry, which demands a high degree of training, has produced an unusually large concentration of skilled workers in one town. Wetzlar has also an iron and steel industry, several engineering works, and a spinning and weaving mill.

Transportation

Marshalling Yards Wetzlar (3)

The marshalling yards and goods station are in the Northern quarter of the town adjacent to the Karolinenhütte steelworks.

/Iron and Steel

WETZLAR (contd.)

Iron and Steel

Sophienhütte

Wetzlar

(3)

The Buderus'sche Eisenwerke A.G. are an important iron and steel concern owning iron-ore mines, iron and steel works, and numerous foundries in Central Germany. The Sophienhütte, the parent works of this concern, are in the Northern quarter of Wetzlar, and include three blast furnaces with a capacity of 140,000 tons of pigiron per annum.

The adjacent steelworks of the Stahlwerke Röchling-Buderus A.G., which is owned jointly by the Buderus concern and the Edelstahlwerke Röchling A.G. of Völklingen (Saar), have four Martin and three electric furnaces with rolling mills and hammer works. The plant is of modern construction and it has been reported that these works have now undertaken the manufacture of shell cases, gun barrels, and tracks for tanks and heavy transport vehicles. The number of workers has been reported to be as high as 3,000.

Karolinenhütte

Wetzlar

(3)

The steelworks and rolling mills of H. Jung & Co., Karolinenhütte G.m.b.H. are adjacent to, and probably work in conjunction with the Sophienhütte works described above.

Ernst Leitz G.m.b.H.

Laufotoferweg

(1)

Next to the Carl Zeiss concern, the Ernst Leitz G.m.b.H. are the leading German makers of optical instruments and lenses. Their parent factory at Wetzlar is a large complex of multi-storeyed buildings of modern construction in the centre of the town. There is also a subsidiary factory in Wetzlar, and a branch in Rastatt/Baden. Leitz undertake the production of the complete range of optical instruments, including cameras, range-finders, binoculars, and periscopes and also finish their entire requirements of lenses. In peacetime some 8,000 workers were employed, and it is probable that this number has now been largely increased.

/Hensoldt

WETZLAR (contd.)

Hensoldt Söhne Moltkestr. (2)

(3) The M. Hensoldt Söhne A. G. are the leading German makers of binoculars and periscopes, and employed approximately 1,200 workers before the war.

A. G. für Optik & Mechanik
A. Dölling Adolf Hitler Anlage)
Otto Seibert der Jüngere Frankenstr.) (2)
Georg Kremp A. G. Braunfelsenstr.)

The above are three of a number of smaller undertakings in Wetzlar making optical instruments and components. Each of these three firms employed some 200 workers before the war.

Hercules Werk Wetzlar (-)

(3) The Hercules Werk G. m. b. H. vorm. W. Momma are manufacturers of bending and pressing machines. They normally employ some 120 workers.

Berkenhoff u. Drebes A. G. Asslar (3)

This is a firm of brass and copper fabricators including brass foundry. They make a variety of small components for the local instrument works.

(1) Textiles, Rayon, Pulp and Paper

Spinnerei Wetzlar (-)

The Spinnerei & Weberei Wetzlar K. G. have a spinning and weaving mill with 5,010 spindles and 124 weaving stools. The factory is reported to have been inactive since 1941.

-----oOo-----

/WIESBADEN

WIESBADEN (Hesse Nassau)

50° 5' N. 8° 15' E: 380 miles: (166,000)

Wiesbaden lies 2 miles from the right bank of the Rhine opposite Mainz. It is connected with Mainz by a branch railway which terminates at Wiesbaden. A second railway leads Northwards from Wiesbaden to Limburg, and a minor branch line connects the town direct with Frankfurt/Main. Wiesbaden itself owes its importance mainly to its development as a health resort of European reputation. The industries, which chiefly consists of engineering and chemical works, are grouped in the outlying suburb of Biebrich, which lies 2 miles South of the town on the banks of the Rhine. The list below also includes the villages of Bierstadt to the East, Dotzheim to the West, and Schierstein to the South-west. The village of Oestrich, which lies some 10 miles further down the Rhine, and includes a chemical plant, is dealt with separately.

Public Utility Services

Power station Wiesbaden (3)

The municipal power station at Wiesbaden has an estimated installed capacity of 18 MW. Its output in 1936 was 26 million kWh. It works in conjunction with the Mainz plant of the Kraftwerke Mainz-Wiesbaden A.G.

Gasworks Wiesbaden (3)

The Wiesbaden municipal gasworks draws its supplies from the works of the Kraftwerke Mainz-Wiesbaden A.G. In 1936 sales were 450 million cubic feet.

Non-Ferrous Metal Manufacture and Fabrication

Glyco Metallwerke Dotzheimerstr. (-)

The Glyco Metallwerke Delaen & Loss G.m.b.H. are manufacturers of solders and metal-plating compositions.

Engineering and Armaments

Linde A.G. Hilda Str. (3)

The Gesellschaft für Linde's Eismaschinen A.G. are the largest German specialists in refrigerating and cooling equipment. They have several branch works in other parts of Germany making refrigerating plant, and machinery and apparatus for the chemical industry, a factory in Aschaffenburg making Diesel motors, and cold-storage plants in several large cities. Wiesbaden is the headquarters of the concern, and contains the administrative offices, a research laboratory, and an experimental plant. At Kostheim on the North bank of the Rhine, 2 /miles

WIESBADEN (contd.)

Linde A. G. (contd.)

miles upstream from Biebrich and opposite Mainz, is the factory of G. H. Walb & Co., which is owned by Linde and manufactures refrigerators for domestic use.

Rheinhütte G. m. b. H. Rheingastr. (-)

The Rheinhütte G. m. b. H. vorm. Ludwig Beck & Co. manufacture fittings and apparatus for the chemical industry. They employed some 300 workers before the war.

Maschinenfabrik Rudolfstr. (-)

The Maschinenfabrik Wiesbaden A. G. are manufacturers of steel radiators, cranes, and lifts. They employed some 300 workers before the war.

Buchhold Keller Nauroderstr. (-)

The Buchhold Keller G. m. b. H., whose works are in Bierstadt, an Eastern suburb of Wiesbaden, manufacture piston rings and various kinds of boring machinery. They employed some 150 workers before the war.

Chemicals and Explosives

Kalle & Co. (I. G. Farben) Biebrich (2)

The Kalle & Co. A. G. are the leading German makers of cellophane and cellulose products and, accounting for approximately 75 per cent of the total German output, they are also important makers of dye-line paper. These dye-line papers are considered superior to the normal blue-print paper. It is probable that this firm, in conjunction with the synthetic resin plant of Albert, is also making resin-impregnated papers now used as substitute insulating materials in the electrical industry. The company, which is owned by the I. G. Farben, employed some 3,000 workers before the war. Their works occupy a large area in the suburb of Biebrich, between the railway station and the Rhine.

/Albert A. G.

WIESBADEN (contd.)

Albert A.G.

Amöneburg

(3)

The Chemische Werke Albert A.G. are an amalgamation of the two firms formerly known as H. & E. Albert and Dr. Kurt Albert G.m.b.H. H. & E. Albert are makers of pharmaceuticals and of chemical fertilisers and insecticides. Dr. Kurt Albert G.m.b.H. manufacture synthetic resins and plastics. These works are in Amöneburg, which is regarded as a suburb of Mainz and is on the Northern bank of the Rhine immediately East of and adjoining Biebrich.

Glisoma Werk

Schierstein

(-)

The Glisoma Werk Willy von Knoop is in the South-western suburb of Schierstein and manufactures mica and other insulating materials.

Hassia
Lyssia

Rüdesheimerstr. }
Walkmühlenstr. }

(-)

The Chemische Fabrik Hassia A. Hüpfner & Co. and the Lyssia Werke Chemisch-Pharmazeutische Produkte G.m.b.H. are makers of pharmaceuticals.

Seck & Alt

Rheingastr.

(-)

The Chemische Fabrik Biebrich vorm. Seck & Alt are makers of roof-felting, tar-spraying fluids, and other bituminous products.

-----oOo-----

WILDFLECKEN (Bavaria)

50° 20' N. 9° 55' E: 44.5 miles: (600)

Wildflecken lies in the extreme North-west of Bavaria, 15 miles South-east of Fulda. It is in the Rhön Mountains and at the terminus of a branch line which leaves the Fulda-Würzburg line 15 miles to the South West. A large munition works has been established in the vicinity.

Engineering and Armaments

Ammunition Factory

Wildflecken

(-)

A large ammunition dump and shell-filling factory is reported to be situated 4 miles North-west of Wildflecken. The factory is said to be well camouflaged in a wooded area, and is heavily defended with A. A. guns. It is reported that some 1,500 workers are engaged, mostly Polish and Czechoslovakian women. The workers live in hutments near the dump, which are also well concealed in the woods.

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WILHELMSHAVEN (Oldenburg)

53° 32' N. 8° 7' E: 375 miles; (140,000)

Wilhelmshaven lies on the North Sea coast at the mouth of the small river Jade which flows into the sea a few miles West of the Weser. It is 40 miles North-west of Bremen and is at the end of a branch railway from Bremen via Oldenburg. It is the Eastern terminus of the Ems-Jade Canal and thus has access to the Dortmund-Ems Canal system. Wilhelmshaven is one of Germany's largest naval bases and is the headquarters of the North Sea Western Group and North Sea Coastal Defence Commands. The naval shipbuilding yards of Wilhelmshaven (the Kriegsmarine Werft) have built many famous German warships, including the 35,000 ton battle-cruiser Tirpitz. In the past few years, however, the port has chiefly concentrated on the building of submarines, mainly of the 500-ton class. The yards at Wilhelmshaven also undertake the repair and maintenance of E-boats and other light craft of a similar type. There are a number of oil-storage depots without the port area, described below under Liquid Fuels, but apart from the one firm listed under Engineering and Armaments, Wilhelmshaven contains no other industries of importance.

Transportation

Port Area Wilhelmshaven (2)

Wilhelmshaven has an extensive system of docks which extend for 5 miles along the Northern shore of the Jade Busen, the large bay at the mouth of the river Jade. These docks are all enclosed and are entered through three lock gates at the Eastern end. The dock system is in course of expansion to the Northwards.

The yards of the Kriegsmarine Werft are situated in the Bau-Hafen which lies to the East of the town. It is the innermost of the harbours and has access to the sea via the Ausrüstungshafen.

The Grosser-Hafen is the chief coaling and commercial port and lies immediately South of the town. It includes extensive quay and loading facilities, oil-storage plants, and rail sidings. Immediately to the West is the Zwischen-Hafen which contains one large and two small floating docks. The main coal-loading quays are in the Zwischen-Hafen. Further West is the West-Hafen which includes the yards of the Deutsche Werke A.G. On the long sea-wall which divides the main docks from the Jade Busen are a number of oil-storage installations and the seaplane base which is mentioned below under "Aircraft and Aero Engines". The Ems-Jade Canal enters the port from the West, passes through the Kanal-Hafen (a channel with loading facilities which extends along the landward side of the dock system), and terminates in the Grosser-Hafen.

In the last few years reclamation work has been in progress immediately to the North-east of the main port area where the coastline curves round to the Northward, and it is reported that a new dock, outer port, and other harbour installations are in process of construction.

/Public

WILHELMSHAVEN (contd.)

(3) of the Bau-Hafen.
The yards, which also include two large floating cranes, are extensively served by rail sidings and have their own power supply described above under "Public Utilities."

(3) In 1941 ten thousand workers were employed in these yards and this figure is believed to have increased to approximately 12,000 by the end of 1942.

Deutsche Werke A. G. West-Hafen (2)

(3) The shipbuilding yards known as the Deutsche Werke A. G. are on a small scale compared with the Kriegsmarine Werft but have been extended and modernised since the war. They are now mainly used for the repair and servicing of E-boats and submarines.

Commercial Dockyard Zwischen-Hafen (2)

The Zwischen-Hafen contains three floating docks, of which the largest is of 15,000 tons. On the quays surrounding this basin there are a number of commercial shipyards which are now devoted to naval purposes and carry out mainly the repair and servicing of destroyers, torpedo-boats, submarines and naval auxiliaries.

(3) Engineering and Armaments

Franz Kuhlmann Rüstingen (3)

(3) This firm which is situated in the Western suburb of Rüstingen, formerly manufactured drawing office equipment and measuring instruments of all kinds. They are now reported to be making gauges and special apparatus for U-boats.

-----oO-----

WISMAR (Mecklenburg)

53° 54' N. 11° 28' E: 515 miles: (35,000)

Wismar lies on the Baltic coast 35 miles East of Lübeck. It is at the end of a branch railway connecting with the main line from Lübeck to Rostock. It is a market centre for the neighbouring agricultural district. The chief industrial importance of Wismar is now due to the assembly plant of the Norddeutsche Dornier Werke aircraft concern, which is described below. There is also a large firm of railway-wagon builders. The shipbuilding industry is also represented, and there are other minor general engineering works.

/Aircraft

WISMAR (contd.)

Aircraft and Aero Engines

Dornier Werke

Wismar

(2)

The Norddeutsche Dornier Werke G.m.b.H. are an important subsidiary of the Dornier concern, which has factories in Berlin-Reinickendorf, Wismar, and Lübeck. They have one main and 2 small subsidiary factories in Wismar. The main works, which is situated on the airfield, is engaged on the assembly of Dornier 217 long-range bombers and Dornier 24 transport aircraft and imports components from the nearby subsidiary works. The work of fuselage centre-section and wing inner-section assembly, which was formerly carried out at "Die Werft", is now reported to have been transferred to Neustadt-Glewe. Of the smaller works making components in Wismar, Werk I, which is in the Southern outskirts of the town, consists mainly of machine shops with lathes and presses. Werk II is in a group of old buildings to the South-east of the Industriehafen. No details are known of this plant, which appears to be on a small scale. It has been reported that as many as 6,000 workers are employed in the Wismar group of Dornier factories.

Shipbuilding

Ship Yard

Wismar

(3)

There is a small shipbuilding yard at Wismar which is reported to undertake the construction and servicing of E-boats and other small craft. In April 1943 2 E-boats were building. There was also a cargo steamer undergoing repairs. The name of the yard is not definitely known.

Engineering and Armaments

Waggonfabrik Wismar A.G.

Wismar

(3)

The Triebwagen & Waggonfabrik Wismar A.G. are makers of railway goods-wagons and passenger coaches. They can also undertake the construction of electric locomotives, street-cars, lorries and trailers. Some 2,000 workers are reported to be employed. The majority of the shares of this company are controlled by the Eisenbahn Verkehrsmittel A.G. of Berlin.

WITTEN (Westphalia)

51° 25' N. 7° 20' E: 320 miles: (76,000)

The area considered here extends from Herbede and Herdecke on the river Ruhr northwards, including Witten, Annen, and Kruckel to Hombruch and Langendreer: it excludes the Langendreer marshalling yard which is described under "Bochum".

Witten lies at the South-eastern end of the Ruhr industrial area, 6 miles South-east of Bochum. The area contains the Herdecke hydro scheme, three small steelworks, various engineering works, and a factory making chemicals.

Transportation

Railway Workshops Witten (3)

The railway-repair workshops are situated immediately North of Witten station. The workshops are of medium size and employed 970 workers before the war.

Public Utility Services

Herdecke Hydro Scheme

The Herdecke hydro scheme is based upon the Hengsteysee, an artificial reservoir created by damming the river Ruhr below its confluence with the Lenne, and consists of 3 hydro-electric stations and an important substation. The scheme has an installed capacity of 146 MW. and is owned by the Rheinisch-Westfälisches Elektrizitätswerk A.G. (RWE.) Essen.

Hengstey I & II Power Stations. Hengsteysee (3)

These two power stations are part of the Herdecke Hydro scheme.

Hengstey I, a flow station of 3 MW. capacity, is on the weir at the end of the reservoir. Hengstey II, a similar station also of 3 MW. capacity, is on the river Ruhr a mile below Hengstey I, from which it is controlled. Both stations are of local importance only.

Koepchenwerk Hengsteysee (1)

This is the third and by far the most important of the stations which comprise the Herdecke hydro scheme.

The Koepchenwerk is a pumped-storage station of 140 MW. capacity; it is situated on the North bank of the Hengsteysee, 6 miles E.S.E. of Witten. 540 feet above the station is the upper storage reservoir, a smaller reservoir which is filled with water from the lower reservoir by pumps situated in the generator hall below. Four large pipe lines arranged in pairs connect the upper reservoir with the station; these made a conspicuous landmark but since the war have been heavily camouflaged.

In/

WITTEN (contd)

In the power house are 4 turbines, 4 alternators, and 4 pumps. During low-consumption periods on the R.W.E. grid, the pumps, operated by the alternators, replenish the upper reservoir. The station is for peak load and emergency use; its great importance lies in that when the upper reservoir is full, it can produce up to 140 MW. almost instantaneously.

Substation

(1)

The substation is adjacent to the power station; it has been developed since the war into a key switching station for the Ruhr industrial area, second in importance only to Brauweiler.

The station was designed for eight 220-kV lines and two 110-kV lines. Single-circuit 220-kV lines go to Leithe via Hattingen, Gersteinwerk (Stoekum), Brauweiler, Kruckel; double-circuit lines to Letmathe and Kreuztal.

No definite information is available about the 110-kV lines; connections possibly go to the Cunowerk and Hattingen stations.

Cunowerk Power Station

Harkortsee

(2)

The Cunowerk thermal power station - named after a director of the owning company - is situated 3 miles South-east of Witten, on the Harkortsee, a reservoir on the river Ruhr; it is owned by the Kommunales Elektrizitätswerk Mark A.G. Hagen, and has an installed capacity of 85 MW. It is also known as the Herdecke thermal power station. It is a base-load station and has been considerably extended since it was opened in 1908. A heat-supply system is associated with the station. An open-air substation with a number of 10/50 kV and other transformers and switches is situated in the western area of the works.

Long-distance supplies may be given at 100 kV via the Koepchenwerk station (see above), 2 miles to the East. 3 lines at 50 kV connect to Gevelsberg and Schwerte, and via Schalksmühle to the Elversingen station, 16 miles to the South-east, which is also owned by the company.

Local supplies at 10 kV are believed to be given, including a supply to the Accumulatorenfabrik Hagen A.G. 3 miles to the South-east.

R.W.E. Power Station

Kruckel

(3)

Owned by Rheinisch-Westfälisches Elektrizitätswerk A.G. the power station is situated 3 miles North-east of Witten. It has an installed capacity of 41 MW. and contains a substation for 10/50 kV. It serves the surrounding industrial area.

Gasworks/

WITTEN (contd.)

Gasworks

Witten

The municipal gasworks draws its supplies from the Gerthe coking plant of the Bergbau-A.G. Lothringen. In 1936 it sold 150 million cu. ft.

Solid Fuels

Neu-Iserlohn Coking Plant

Somborn (3)

The coking plant is owned by the Harpener Bergbau A.G. and is situated $3\frac{3}{4}$ miles North of Witten station and just South of the village of Somborn. The plant has 80 ovens with an estimated annual dry coal capacity of 175,000 tons.

Iron and Steel, and Ferro-Alloys.

Gusstahlwerk Witten

Witten (3)

Owned by the Ruhrstahl A.G. group of Vereinigte Stahlwerke A.G., the steelworks are situated adjoining and South-west of Witten station. There are seven open-hearth furnaces having an annual estimated capacity of 150,000 tons of crude steel. The works comprises a forge containing 2 presses and 6 other large hammers; 1 heavy mill for rolling ingots and 2 lighter mills for bars and sections; a wire-mill producing wire rope; and 8 modern heat-treatment furnaces for special steel.

Annener Gusstahlwerk

Annen (3)

Owned by the Ruhrstahl A.G. group of Vereinigte Stahlwerke A.G. the steelworks are situated about $2\frac{1}{2}$ miles North-east of Witten station. There are two open-hearth furnaces having an estimated annual capacity of 50,000 tons of crude steel. The works produces mainly structural steel.

Stahlwerk Mark

Wengern (3)

Stahlwerk Mark Wengern A.G. is a subsidiary of Vereinigte Stahlwerk. There are two separate but adjacent works situated on the Southern bank of the river Ruhr about $2\frac{1}{2}$ miles South-east of Witten. There are 3 open-hearth furnaces and rolling mills. The works produce heavy steel forgings including parts for blast-furnaces and transformers, etc. In 1938 there were 650 workers.

Engineering and Armaments

Soeding & Co.

Witten (-)

This firm is situated 1 mile North-east of Witten station in the built-up area of the town. The works produced machine tools before the war.

Mannesmannrohren-Werke A.G./

WITTEN (contd)

Mannesmannrohren-Werke A.G. Witten (2)

Situated about 1 mile North-east of Witten station, in the built-up area of the town, these works are believed to supply all the contact ovens used in the Fischer-Tropsch process of synthetic oil production. In addition light-alloy tubes for aircraft are made.

Demag Wetter (3)

These large works of the Deutsche Maschinenfabrik A.G. are situated on the North bank of the river Ruhr at Wetter, $4\frac{1}{2}$ miles South-east of Witten. The works make cranes, suspension cranes, double-acting hoists, and other products of a similar nature.

Dittmann-Neuhaus Ost-Herbede (3)

The works of Dittmann-Neuhaus & Gabriel Bergenthal A.G. are situated $2\frac{1}{2}$ miles W.S.W. of Witten on the North bank of the river Ruhr. These works, which are of medium size, produce springs of all types, and supply large quantities to the Reichsbahn for rolling stock.

K. Korfmann Jr. Witten (3)

These small works are situated in the built-up area of the town, about 1 mile North-east of Witten station. They specialise in the production of mining machinery including conveyors.

Chemicals and Explosives

Märkische Seifenindustrie Witten (-)

These works are situated $1\frac{1}{2}$ miles North-east of Witten station in the built-up area of the town, and cover 60,000 sq. metres. Soap and glycerine are produced and there are reported to be about 700 workers.

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/WITTENBERG

WITTENBERGE (contd.)

Engineering and Armaments

Singer A.G. Wittenberge (3)

The German Singer company have their headquarters in Berlin, and branches in various other parts of Germany. The Wittenberge plant, which before the war manufactured sewing machines and employed some 2,000 workers, is now reported to have been considerably extended and to have been partly turned over to the production of radiolocation equipment.

Chemicals and Explosives

Kurmärkische Zellwolle Wittenberge (3)

The Kurmärkische Zellwolle & Zellulose A.G., whose headquarters are in Berlin, have a branch factory in Wittenberge which is believed to be engaged on the manufacture of viscose staple fibre. It is estimated to have a daily capacity of 120 tons.

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WOLFENBÜTTEL (Brunswick)

52° 10' N. 10° 30' E: 460 miles: (20,000)

Wolfenbüttel lies on a branch railway line 8 miles South of Brunswick. It lies at the foot of the Hartz Mountains in the valley of the river Oker and is chiefly a garrison town and the market centre of the surrounding agricultural district. Wolfenbüttel contains a number of small industries, including engineering, textiles, furniture and soap manufacture. Apart from the firms described below, none is of importance.

Engineering and Armaments

Gebr. Welger Wolfenbüttel (-)

This is the largest of a number of small engineering firms in Wolfenbüttel, of which the main products are agricultural machinery and implements and farm carts.

/Textiles

between
Wittenberge
railway
Zellulose
tries
chemical
age

(3)

(-)

(-)

25

WORMS (Hesse)

49° 40' N. 8° 20' E: 395 miles: (52,000)

Worms, which is 12 miles North of Mannheim, is on the railway which follows the left bank of the Rhine from Mainz to the Upper Rhine valley. It is an important centre of leather manufacture. Other industries, which are on a minor scale, include engineering, chemicals, and furniture making. Worms has a small inland port.

Transportation

Inland Port Worms (3)

There are two harbours in the Eastern quarter of the town, the Handelshafen and the Flosshafen. These docks are served by rail sidings, and there are warehouses and storage depots in the area.

Public Utility Services

Gasworks Worms (3)

The municipal gasworks made 200 million cu. ft. in 1936.

Leather

Cornelius Heyl A.G. Worms (3)

This important firm is believed to be one of the largest German manufacturers of leather, including box calf, patent chrome side, calf and russet, and also all fancy leather wear. The factory employed some 3,200 workers before the war.

Heyl'sche Lederwerke G.m.b.H. Worms (3)

The Heyl'sche Lederwerke Liebenau vorm. Cornelius Heyl Werk Liebenau G.m.b.H. are important producers of upper, side, and box-calf leather and employed some 1,200 workers before the war.

Doerr & Reinhart G.m.b.H. Worms (-)

This firm, which has a similar range of products to those mentioned above, employed some 500 workers in 1939.

Food Stuffs

Zuckerfabrik Rheingau Worms (-)

The Zuckerfabrik Rheingau A.G., which is owned by the Süddeutsche Zucker A.G. Mannheim, employed 200 workers before the war.

Flour Mills Port Area (-)

There are several flour mills in the neighbourhood of the inland port with a total estimated daily milling capacity of 400 tons.

-----o-----

W U P P E R T A L (Rhineland)

51 15' N. 7 15' E: 318 miles: (411,000)

Wuppertal was formed in 1929 by the amalgamation of the towns of Elberfeld and Barmen. It lies on either side of the river Wupper and stretches up the fairly narrow Wupper valley from Vohwinkel in the West to Langerfeld 10 miles to the East. Industry in Wuppertal is mainly textile, but there is also the large chemical works of I.G. Farbenindustrie and several engineering firms of which one is an important producer of ball-bearings.

The principal means of internal transport is the famous Wuppertal-Schwebebahn, a monorail suspension railway over the river which operates over a distance of eight miles with 30 stations between Ober-Barmen and Vohwinkel

Transportation

Marshalling Yard Vohwinkel (3)

This yard, situated 3 miles West of Elberfeld, has capacity for handling 2,900 wagons in 24 hours. It is at the junction of the main line to Essen.

Public Utility

Städtische Elektrizitätswerke Elberfeld (3)

The municipal thermal power station is situated in the western area of the town. It has an installed capacity of 20 MW. and is a peak-load and standby station, used mostly for town heating supplies.

Kraftwerk Barmen Barmen (3)

The municipal thermal power station has an installed capacity of 20 MW. It is situated below the Barmen-Neubruch railway station.

Städtische Gasanstalt Elberfeld (3)

The municipal gasworks are situated in the western outskirts of the town area adjoining the railway to Vohwinkel. They supply the whole of Wuppertal. In 1936 the municipality sold 1,900 million cu. ft. of gas of these sales 750 million cu. ft. were manufactured, and 1,150 million cu. ft. were purchased from the Thyssen and Ruhrgas grids.

Non-ferrous metals.

Julius & August Erbsloh Metallwerke A. G. Barmen (3)

The large site occupied by this firm is in the centre of Barmen. It is a metal works producing aluminium wrought alloys and wrought-alloy products, mainly sheets, rectangles, sections, rods, wire, and tubes.

/Engineering

WUPPERTAL (contd.)

Engineering and Armaments

G. & J. Jaeger. Elberfeld (2)

This firm manufactures heavy roller and heavy ball bearings including aero-engine bearings. The works has a floor space of 607,000 sq. ft. on a site of 43 acres. Number of workers are estimated at 1,500. The factory is thought to be specially important for the manufacture of tank bearings for turrets and other heavy applications.

Präzisionswerkzeugfabrik Svenssen. Elberfeld (-)

This firm, with some 200 workers, manufactures precision machine tools and milling machinery.

Metalldraht G.m.b.H. Elberfeld (3)

Just North of the city's main marshalling yards, this firm occupies a large site which extends both sides of the river Wupper. It is believed to be engaged mainly on the production of fine wire for the electrical industry.

Karl Walter Elberfeld (3)

This works occupies a fairly large site to the South-west of a group of industrial buildings lying North of the city's main marshalling yards. It was engaged on the production of machinery for the textile industry but is now probably producing essential war goods.

Vorwerk & Co. Barmen (3)

This firm has two large plants in Barmen. One of these, to the S.W. of the city, is described under "Rubber". The other is divided into two sections, one part described under "Textiles". The second part (described here) is concerned with the production of gear-wheels and wheels and machinery for the chemical industry. The total number of workers in the second plant is estimated at some 800.

Hermann Leimbach. Barmen. (-)

Precision machine tools and milling machinery are produced by this firm with some 100 workers.

Maschinenfabrik Rheinwerk G.m.b.H. Ober-Barmen (3)

This firm manufactures compressed air containers and machinery components, also /wood-gas

WUPPERTAL (contd.)
Engineering and Armaments (contd.)

wood-gas generators. 400 workers are employed

C. Albert & Co. Barmen (3)

Before the war, this firm was mainly engaged on the production of pressed parts for motor vehicles and motor-vehicle accessories. Its production of iron and steel drawn, die-cast, and pressed parts and rolled and concave profiles is now utilized in all probability for essential war products other than or in addition to motor-vehicles.

Barmen Maschinenfabrik A.G. Barmen (3)

Textile machinery and special machines for the rayon industry are produced, with some 400 workers, by this firm, which is owned by Bereinigte Glanzstoff-Fabriken A.G., Elberfeld.

Emil Linde Maschinenfabrik. Barmen (3)

This plant covers a fairly large site to the Northwest of Barmen and specializes in machine tools and presses.

Franz Durholdt. Barmen (3)

Comprising a metal foundry and workshops, the works occupy a fairly large site to the west of Barmen. Castings, joinings and fittings for chemical and textile factories are produced.

Emil Kehlenbach. Barmen (-)

This firm produced textile machinery before the war and occupied a fairly extensive site to the extreme West of Barmen, North of the Guterbahnhof-Barmen. Its present activity is not known.

Dr. Schmidt & Apelt K.G. Barmen-Langerfeld (3)

This firm is one of Germany's main manufacturers of furnaces for the steel industry. It makes electric furnaces and accessories and annealing and hardening furnaces.

Chemicals & Explosives

I.G. Farbenindustrie A.G. Elberfeld. (1)

This plant of the I.G. Farben comprises an oxygen works, and works for the production of dyes and colours, and medicinal and pharmaceutical preparations

/including

WUPPERTAL (contd.)

I. G. Farbenindustrie (contd.)

including quinine. It is situated at the western end of the town of Elberfeld, and stretches over both sides of the River Wupper and its overhead railway. Immediately to the West and East of the plant respectively are the municipal gasworks and the Elberfeld power station. Workers are estimated to number some 4,000. The plant also included one of the most important of the I. G. research units, particularly for research on tropical diseases, and physiological and pharmacological laboratories.

Ferdinand Gebhard Elberfeld (-)

Although aerial cover shows that this plant has been extended since the outbreak of war and covers a large area to the West of the main passenger station, nothing is known of the details of production nor the number of workers. It is believed, however, that pharmaceuticals are being manufactured.

Chemische Fabrik Einergraben,
Dr. Löhmann & Co. Barmen. (-)

This plant covers a very extensive site, but it is not known to what extent the buildings are active or what is being made, except that in 1938 this firm was said to have a sulphuric-acid works in Wuppertal-Barmen. It is possible that since the war the concern has been taken over by I. G. Farben.

Textiles, Rayon, Pulp and Paper.

Frowein & Co. A. G. Elberfeld. (-)

This firm were manufacturers of band cord twine and artificial silk before the war. Their present activity is not known.

Elberfelder Textil-Werke A. G. Elberfeld. (-)

This plant has 3,000 looms and is mainly concerned with the weaving of combed yarn. Workers in 1938 numbered 740. It is now inactive.

Kunstseiden A. G. Barmen. (-)

Owned by the Vereinigte Glanzstoff-Fabriken A. G. Elberfeld, this firm was concerned with the refining, processing, and weaving of rayon. Workers numbered 1,000 before the war, but the works is believed to have been largely inactive since 1940.

/Vorwerk

WUPPERTAL (contd.)

Vorwerk & Co.

Barmen.

(-)

This section of the second Vorwerk plant in Barmen is the largest manufacturer of carpets in Germany. Rugs and linoleum are also produced. (For workers see "Engineering and Armament".)

J. & P. Bemberg A. G.

Langerfeld/Oelide.

(3)

This large rayon plant, situated to the South-east of Barmen, is controlled by the Vereinigte Glanzstoff-Fabriken A. G., Elberfeld. capacity was 11,000 kg. per day of cuprammonium rayon before the war. The works cover an area of 31,220 sq. metres on a site of 41,038 sq. metres. The number of workers was 4,500 in 1938. The plant has its own power station with a capacity of 3,800 kW. but is believed to have been largely inactive since 1942.

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WÜRZBURG (Bavaria)

49° 48' N. 9° 55' E: 460 miles: (107,000)

Würzburg is 55 miles North-west of Nürnberg, and is the administrative centre of the Bavarian district of Lower Franconia. It is on the river Main, and the town is built mainly on the right bank. Würzburg is an important railway centre, and two trunk lines pass through the town from Frankfurt/Main to Nuremberg, and from North Germany to Stuttgart. The main railway station and goods yards are to the North of the central area of the town, which is a closely-built area enclosed by a belt of gardens which have taken the place of the former city walls. North-west and North-east of the central area are large barracks, which up to the outbreak of war were occupied by armoured and motorised divisions.

Würzburg is in the midst of a large agricultural district, and is an important flour-milling centre, the industry being in the hands of a number of medium-sized undertakings. Wine and fruit are largely grown in Franconia, and Würzburg has also three large breweries which did a big export trade in peace-time.

The other industries are varied, and although none of the individual firms is large, engineering, textiles, varnish and dye manufacture, and furniture-making are all represented and in the aggregate give Würzburg considerable industrial importance. The industries are mainly grouped in the northern and eastern quarters of the town.

West of Würzburg there is an important link station on the 110 kV transmission line between the Bayernwerk and the R.W.E.

There is also a small inland harbour on the northern side of the town on the river Main.

Transportation

Inland Harbour Würzburg (3)

The small inland harbour is on the right bank of the Main to the West of the main railway station. It is served by rail sidings and includes several warehouses and storage depots.

Railway Junction Würzburg (3)

The main railway station is immediately North of the central town area. The railway line from Frankfurt/Main and the Rhine valley to Southern Germany enters Würzburg from the North-west, and immediately East of the main railway station divides into two branches, of which one leads to Nuremberg and Regensburg, and the second through Ingolstadt to Munich. Würzburg is also on the main line which runs from Berlin and Magdeburg through Erfurt and Würzburg to Stuttgart and South-western Germany.

Railway Repair Shops/

WÜRZBURG (contd)

Railway Repair Shops Würzburg (3)

The railway-repair shops are adjacent to the main railway station. They undertake the repair and maintenance of goods wagons.

Marshalling Yards Würzburg (3)

The marshalling yards, which also adjoin the main railway station, can handle up to 2,000 wagons per 24 hours.

Public Utility Services

Bayernwerk Unterdürrbacher Landstr. (2)

This is an important switching station on the 220-kV line between Nuremberg and Frankfurt/Main, and an important link on the 110-kV transmission line between the Bayernwerk and the R.W.E.

Gasworks Würzburg (3)

The municipal gasworks are adjacent to the main railway station in the Northern quarter of the town. They made 425 million cu. ft. in 1936.

Liquid Fuels and Substitutes

Oil Storage Würzburg (-)

There are a number of storage tanks, chiefly grouped to the East of the main railway station, in the neighbourhood of the Aumühle. The total storage capacity is estimated at 10,000 tons.

Non-Ferrous Metal Manufacture and Fabrication

W. Stecher Blasiesgasse (-)

Ruckert & Co. Kaiserstr. (-)

The above are two firms of tin-founders and manufactures of tinware.

Shipbuilding

Paul M. Stuhler Alte Kasern Str. (-)

Stuhler & Hupp Seilerstr. (-)

The above are two small firms building mainly river craft and small barges.

Engineering and Armaments./

WÜRZBURG (contd)

Engineering and Armaments

Georg Noell Nürnbergstr. (3)

The Georg Noell & Co., Maschinen & Eisenbahnbedarfs-Fabrik und Brückenbau-Anstalt are makers of railway signalling installations and industrial weighing machines. They manufacture complete railway point systems, and also coal-conveying plant and travelling platforms, and bridge constructions. In peacetime this firm employs some 600 workers.

König & Nauer Friedrich König Str. (3)

The Schnellpressenfabrik König & Bauer A.G. are an old-established firm manufacturing printing machinery, who claim to be the pioneers of the high-speed printing press in Germany. In peacetime they employed some 1,300 workers, and were important makers of all types of printing machines, including high-speed news presses. According to ground intelligence the works was converted in 1939 to make small arms and a variety of unspecified armaments.

Sturtz Beethoven Str. (-)

Before the war the Universitäts-Druckerei H. Sturtz A.G. were an important firm of book-printers and book-binders. They employed some 600 workers before the war and the works had an engineering section with machine shops etc. presumably for the repair and maintenance of printing installations.

Bohn & Herber Horst Wessel Str. (-)

The Bohn & Herber Maschinenfabrik & Eisengiesserei are manufacturers of printing presses.

Gebr. Hofmann Eibelstadt (-)

The Gebr. Hofmann Landmaschinenfabrik & Eisengiesserei are makers of agricultural and flour-milling machinery, canning machines, and wine presses. Their works are at Eibelstadt on the right bank of the Main, 4 miles upstream from Würzburg.

Sirch & Sohn Semmelstr. (-)

This firm, which employs several hundred workers in peacetime, manufactured industrial weighing machines and safes. Their present activity is not known.

Ernst Stenz Schweinfurterstr. (-)

The Franken Industrie-Werke Ernst Stenz are makers of sheet metal, wire netting, and hardware.

A. Obermeier Reuerergasse (-)

This firm manufactured refrigerators for industrial and domestic use.

Chemicals and Explosives/

WÜRZBURG (Contd)

Chemicals and Explosives

Bavaria Hindenburgstr. (-)

The Chemische Fabrik Bavaria are small manufacturers of pharmaceuticals.

Heilmann Nachfolger Oswaldspitalgasse (-)

The Heilmann Nachf. In. Ver. are makers of paints and varnishes.

Friedrich Woesch Wredestr. (-)

Before the war this firm manufactured fireworks.

Textiles, Rayon, Pulp and Paper

L. & C. Meyer Martinstr. (-)

Eugen Flurschütz Bruderhof

The Werkstätte Kunstgewerblicher Wollwaren L. & C. Meyer and the firm of Eugen Flurschutz are makers of hosiery and knitted and woven goods.

Leather

Schübel & Co. Bohnesmuhlgasse (-)

This firm manufactures driving belts and similar leather goods.

Food Stuffs

Franconia Zeppelnistr. (-)

Prior to the war the Franconia Schokoladenwerke A. G. manufactured cocoa, chocolate, and confectionery, and employed some 300 workers.

Adam Schulz Mühlenstr. (-)

V. Hoffmann

The above are believed to be the two largest of several flour mills in the Würzburg area.

WÜRZEN (Saxony)

51° 20' N. 12° 45' E: 555 miles (19,000)

Würzen lies 15 miles East of Leipzig on the main railway to Dresden. There are several small engineering works in the town and a number of firms making electric-light fittings, which have become a speciality of Würzen. Würzen is an agricultural market centre; and there is also a biscuit factory, which is described below.

Engineering and Armaments/

WURZEN (contd).

Engineering and Armaments

Schutz Wurzen (3)

The firm of G.A. Schutz manufacture vacuum pumps, filters, and air and gas compressors. Some 300 workers were employed before the war.

Senior Werk Wurzen (-)

The Senior Werk Busse are manufacturers of agricultural machinery and implements. 150 workers were employed before the war.

F.A. Dämich	Wurzen	}	(-)
Türk & Müller	Wurzen		
Paul Gitte	Wurzen		

The above are three examples of several firms in Wurzen producing all kinds of electric lamps and light fittings.

Food Stuffs

Biscuitfabrik Wurzen (-)

The Wurzenener Kunstmühlenwerke & Biscuitfabriken vorm. F. Krietsch A.G. are biscuit makers who employed some 500 workers in peacetime.

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WUSTERMARK (Brandenburg)

52° 35' N. 12° 56' E: 565 miles: (1,000)

Wustermark is a small country town 16 miles West of Berlin, in the vicinity of the large military training area and town of Döberitz. It has no industries, but is of considerable importance as a railway centre, from its situation on the main line from Berlin to the Ruhr and to Paris, Brussels and Rotterdam via Stendal, and Hanover. Goods traffic for Hamburg and the northern ports proceeds via Wustermark where it is turned north to join the main northern line at Nauen.

Transportation

Marshalling Yard Wustermark (2)

The marshalling yard has capacity for handling 5,800 wagons in 24 hours.

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WYHLEN (Baden)

W Y H L E N (Baden)

47° 35' N. 7° 55' E: 445 miles: (3,000)

Wyhlen is 4 miles East of Basle and is on the Upper Rhine close to the Swiss frontier. It is approximately halfway between Basle and Rheinfelden. The hydro-electric station at Augst-Wyhlen is dealt with under the heading "Waldshut".

Engineering and Armaments

Eisenbau Wyhlen A. G.

Wyhlen

(-)

The Eisenbau Wyhlen A. G. are constructors of bridges and steel frame buildings. They have a factory in Wyhlen which employed some 300 workers before the war.

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ZEITZ (Province Saxony)

51 5' N. 12 10' E: 530 miles: (35,000)

Zeitz lies 8 miles North of Gera on the railway to Leipzig. It is the junction for a branch line leading to Weissenfels. It is one of the administrative centres for the exploitation of the browncoal deposits in this area. An important synthetic-oil plant at Tröglitz, 3 miles North-east of Zeitz, obtains its raw material from these browncoal deposits, which also supply the fuel for the thermal power station attached to the works. The industries of Zeitz itself include several engineering works, of which the largest are mentioned below, and several manufacturers of pianos, which in peacetime is a speciality of the town.

Transportation

Marshalling Yards Zeitz (3)

The marshalling yards, which are situated in the Northern part of the town, are capable of handling 2,600 wagons per 24 hours.

Public Utility Services

Electric Power Station Tröglitz (2)

This thermal power station, which is 3 miles North-east of Zeitz, forms part of the synthetic-oil plant owned by the Braunkohle-Benzin A.G., mentioned below under Liquid Fuels. The power plant has a capacity of 175 MW., and obtains its fuel from the adjacent brown-coal mines.

Solid Fuels

Riebeck Zeitz (3)

The A. Riebeck'sche Montanwerke A.G. exploit a number of large brown-coal deposits in the district South of Halle, and Zeitz is their administrative centre for the group of mines situated in the area to the North and North-east of the town. This group of mines, some of which are deep pit mines, had a total output of 4,200,000 tons of brown-coal in 1937. There are a number of briquetting plants which in 1937 produced 1,300,000 tons.

Liquid Fuels

Braunkohle-Benzin A.G. Tröglitz (-)

This synthetic-oil plant of the Braunkohle-Benzin A.G. is situated in the small village of Tröglitz, 3 miles to the North-east of Zeitz. It was estimated to have an annual capacity of

/320,000 tons

ZEITZ (Province Saxony) continued.

320,000 tons of synthetic fuel and employ about 5,000 workers but recently suffered very severe bomb damage and is now completely out of action. In view of the improbability of industrial plant being available it may be assumed that this works will remain inactive at least until early 1945.

Engineering and Armaments

Eisengiesserei Zeitz (3)

The Zeitzer Eisengiesserei & Maschinenbau A.G. are makers of special machinery and equipment for the brown-coal industry. They also produce pumps and crushing machinery. Before the war some 600 workers were employed.

Naether A.G. Zeitz (3)

The E.A. Naether A.G. specialise in the manufacture of perambulators of which they are one of the leading German suppliers. In peacetime they employed some 1,500 workers. The firm is reported to be fully active but its present range of products is not known.

A. Fahr Zeitz }
Hupfer & Comp. Zeitz } (-)
Schmidt & Sohn Nachf. Zeitz }

These are three of several firms in Zeitz which before the war manufactured pianos.

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ZELLA-MEHLIS (Thuringia)

50° 40' N. 10° 40' E: 470 miles: (30,000)

Zella-Mehlis lies in the Thuringer Wald, 3 miles North of Suhl. The industries are mainly concerned with the manufacture of small arms. Zella-Mehlis is industrially an off-shoot of Suhl, which is an important centre for this branch of industry. There are also several firms in Zella-Mehlis which specialise in all kinds of bicycle and motor-cycle components.

/Engineering

ZELLA-MEHLIS (continued)

Engineering and Armaments

Germania Waffenwerk A.G.

Zella-Mehlis

The J.G. Anschutz Germania Waffenwerk A.G. are important manufacturers of rifles, pistols, machine guns, and S.A.A. They are reported to employ up to 5,000 workers.

Carl Walther

Zella-Mehlis

(3)

This firm produces automatic pistols and rifles, and in peacetime specialises in various types of office machinery. They are now said to be the leading German manufacturers of signal pistols. It is reported that the works have been considerably extended during the war, and that in addition to infantry weapons, they are now making locomotive bogies and possibly also aircraft components.

Mercedes A.G.

Zella-Mehlis

(2)

The Mercedes Büromaschinenwerk A.G. have two factories in Zella-Mehlis. In peacetime this company manufactured a variety of office equipment, including typewriters and calculating machines, and one section of the firm is still believed to be devoted to this type of work. The rest of the plant has been mainly turned over to the production of small-arms components, and it is believed that the number of workers has been increased to at least 4,000.

H. Wisner A.G.

Zella-Mehlis

(3)

The Metallwarenfabrik vorm. H. Wisner A.G. make bicycle components, including bells, brakes, pedals, axles, and wheels. This firm, which has two plants in Zella-Mehlis, is reported to employ some 2,000 workers.

K. Pfestorf

Zella-Mehlis

Moritz & Gerstenberger

Zella-Mehlis

(3)

H. Wehrauch

Zella-Mehlis

The above are three of several smaller firms in Zella-Mehlis which are now manufacturing automatic pistols, revolvers, and rifles.

G. Hubing

Zella-Mehlis

A. Jopp

Zella-Mehlis

(3)

K. Reich

Zella-Mehlis

/The

ZELLA-MEHLIS (continued)

The above three examples of a large number of firms making all kinds of small components for bicycles and motorcycles.

Röhm Ges.

Zella-Mehlis (-)

The Röhm Gesellschaft makes machine tools, chiefly for use in the small-arms factories. This firm employed some 300 workers before the war.

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ZEULENRODA (Thuringia)

50° 40' N. 12° E: 530 miles: (13,000)

Zeulenroda lies 25 miles East of Saalfeld. The town has developed a specialised industry in the manufacture of knitted and woven rubber goods. Other industries include the manufacture of machine tools and furniture. The principal firms are described below.

Engineering and Armaments

Adolf Lang Zeulenroda (-)

The Adolf Lang Werkzeugmaschinenfabrik are manufacturers of all kinds of lathes. The firm was formerly known as Baumann & Falck G.m.b.H. 350 workers were employed before the war.

Carl Roth Bleichenweg (-)

This firm specialises in machine tools for the rubber industry.

Rubber and Tyres

Römpler Zeulenroda (3)

The Julius Rompler A.G. are the largest of the rubber-wear manufacturers in Zeulenroda. They specialise in rubber weaving and knitting, and their products include rubber stockings, body-belts, corsets, bandages, and sports wear. They employed some 800 workers before the war.

Paul Lotter K.G. Zeulenroda }
August Pfuller Zeulenroda } (-)
J. Zorn & Co. G.m.b.H. Zeulenroda }

The above are three of several firms in

/Zeulenroda

Zeulenroda (Continued)

J. Zorn (contd.)

Zeulenroda specialising before the war in the manufacture of rubber stockings and other knitted and woven rubber goods.

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ZITTAU (Saxony)

50° 55' N. 14° 5' E: 650 miles (40,000)

Zittau is on a branch railway line 30 miles South-east of Bautzen and close to the former Czechoslovak frontier. The chief industry of the town comprises a number of textile mills, of which the engineering works, of which one has attained some importance during the war. To the North-east of Zittau is a brown-coal mining district, which provides the fuel for a large thermal power plant described below under Public Utilities.

Public Utility Services

Electric Power Plant Hirschfelde (1)

This thermal power plant belongs to the A. G. Sächsische Werke and has an installed capacity of 24.9 MW. Fuel is obtained from the adjacent brown-coal mines, which are described below. The power from this plant is supplied to a number of local lines and also direct to Dresden-Süd, Görlitz, and to the Niederwartha pumped-storage station (see Radebeul). The power-station site also includes the first large scale Lurgi gasworks to be built in Germany.

Gasworks Zittau (3)

The Zittau municipal gasworks which made 110 million cu. ft. of gas in 1936, now obtain their supplies for distribution from the Lurgi gasworks at Hirschfelde.

Solid Fuels

Braunkohlenwerk Hirschfelde (3)

The open-cast brown-coal mine of the Braunkohlenwerk Hirschfelde is 3 miles to the North-east of Zittau. The output in 1938 was 2,000,000 tons. The briquetting plant belonging to this mine had an output of 160,000 in 1938, when workers were employed.

Engineering and Armaments

Phänomen Zittau (3)

The Phänomen-Werke Gustav Hiller A. G. produce bicycles, motorcycles, and lorries. They are now supplying these

ZITTAU (Continued)

these to the armed forces, and it is reported that the plant is now building the K.F.Z. 31 under licence from the Auto-Union. 1,000 workers were employed at this plant before the war, but it is believed that this number will have been considerably increased.

Maschenfabrik

Zittau (-)

The Zittauer Maschinenfabrik A.G. are the largest of a number of factories in Zittau specialising in the manufacture of machinery for the textile industry. Some 300 workers were employed before the war.

Chemicals and Explosives

Elektrochemische G. m. b. H.

Hirschfelde-Zittau (3)

This firm is a subsidiary of Chemische Fabrik von Heyden A.G., Radebeul, and Elektra A.G. Dresden. They own an important carbide plant at Hirschfelde and in 1936 had an estimated capacity of 10,000 tons p.a. They also manufacture cyanamide, the capacity for which in 1938 is estimated to have been 2,000 metric tons as nitrogen.

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ZOPFOT (Danzig)

54° 25' N. 17° 35' E: 805 miles: (25,000)

Zoppot lies in the former Free State of Danzig on the Western shore of the Danziger Bucht, 5 miles North-west of Danzig. It is a residential suburb of Danzig, and is mainly a holiday resort. There are no industries of importance.

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ZSCHOPAU (Saxony)

50° 45' N. 13° 5' E: 570 miles: (9,000)

Zschopau lies on a branch railway line 12 miles South of Chemnitz. A large works belonging to the Auto-Union of Chemnitz is established in Zschopau and has now become the most important industrial undertaking in the town. Apart from this there are a number of textile firms.

Engineering and Armaments

D.K.W. Zschopau (2)

The D.K.W. works are a branch of the Auto-Union A.G. of Chemnitz. They are in the Southern quarter of the town on the Eastern bank of the Zschopau river. These works have been greatly enlarged since 1939 and are now believed to employ a total of 6,500 workers. The main products are A.F.V's. No details are available as to the type of A.F.V. which is made or the rate of production.

Textiles, Rayon, Pulp and Paper

Baumwollspinnerei Zschopau (-)

The Zschopauer Baumwollspinnerei A.G. are the largest of several textile mills in Zschopau. Their cotton spinning mill employed approximately 1,000 workers before the war.

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ZWEIBRÜCKEN (Bavaria)

49° 15' N. 7° 20' E: 365 miles: (28,000)

Zweibrücken lies 15 miles East of Saarbrücken on the railway leading from Karlsruhe and the upper Rhine valley to the Saar territory. It is largely an administrative centre for the Western section of the Bavarian Palatinate and is a market for the surrounding agricultural district. In addition to the engineering works mentioned below there are two small weaving mills and a boot and shoe factory.

Engineering and Armaments/

ZWEIBRÜCKEN (contd.)

Engineering and Armaments

Dinglerwerke Zweibrücken (2)

The Dinglerwerke A.G. are makers of high-pressure containers, pumps, gas holders, mining equipment, road construction machinery, and equipment and installations for synthetic-oil plants. The firm is one of the principal German manufacturers of blast furnaces and blast-furnace equipment and produces complete installations with all accessories. Before the war some 1,500 workers were employed.

Lanz A.G. Zweibrücken (3)

The parent works of the Heinrich Lanz A.G. are in Mannheim. The Zweibrücken branch works manufacture mainly agricultural machinery and implements.

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ZWICKAU (Saxony)

50° 45' N. 12° 30' E: 550 miles: (85,000)

Zwickau lies on the railway from Chemnitz to Flauen and is the junction for a branch line leading to Aue. It is in the centre of the Saxon hard-coal mining district, of which the three largest mines are mentioned below. There are large railway repair shops and a number of engineering works, including the Horch and the Audi works, important makers of military transport. The textile industry is represented by several medium-sized cotton and worsted yarn spinners.

Transportation

Railway Repair Shops Zwickau (2)

These are large railway workshops which undertake the repair and maintenance of locomotives and goods wagons. Some 3,500 workers are believed to be employed. These works are also reported to be constructing mobile railway-repair units for use on the Eastern front.

Public Utility Services

Electric Power Station Zwickau (2)

The Zwickau thermal electric power station has a capacity of 35 MW.

Gasworks Zwickau (5)

The works of the Landesgasversorgung Sachsen A.G. draw gas from the two largest coking plants mentioned below and distribute it to the town of Zwickau and some 25 other neighbouring places. In 1936 they sold 600 million cu. ft.

Solid Fuels/

ZWICKAU (contd)

Solid Fuels

Erzgebirgischer A.V. Bockwa (3)

The Erzgebirgischer Steinkohlen-Aktienverein is the largest coal-mining undertaking in the neighbourhood of Zwickau. Their pits, which have 5 pitheads, are grouped in and around the South-eastern suburb of Bockwa, and in 1938 produced 800,000 tons of coal. Their coking plant has an annual rated dry coal capacity of 150,000 tons. Some 4,500 workers were employed in 1938.

Morgenstern Pohlau (3)

The pits of the Gewerkschaft Morgenstern are situated near the Eastern suburb of Pöhlau. There are 9 pitheads. This group of mines in 1938 produced 610,000 tons of coal. The coking plant has an annual rated dry-coal capacity of 100,000 tons. The briquetting plant produced 24,000 tons in 1934. Some 3,000 workers were employed in 1937.

Oberhohndorfer Oberhohndorf (-)

The A.G. Zwickau-Oberhohndorfer Steinkohlenbauverein has a coal mine with 3 pitheads immediately to the South-east of Zwickau. In 1938 some 250,000 tons of coal were produced. There is a small coking plant. In 1937 some 1,500 workers were employed.

Aircraft and Aero Engines

Gebr. Basser K.G. Zwickau (2)

This firm has erected an aircraft repair depot during the war on the airfield which lies to the South-west of Zwickau. The works, which are on a large scale, specialise in the repair of F.W.190's. In February, 1944, 94 aircraft were seen on this field, of which the majority were FW.190's.

Engineering and Armaments

Horch August-Horch Str. (2)

Audi Werke Hindenburg Str. (2)

These two plants are owned by the Auto-Union A.G. of Chemnitz. They produce all types of military transport, including six-wheeled armoured cars. Audi is reported to manufacture various types of engines under licence from Horch and Adler. Horch are stated to be manufacturing the K.F.Z.17, K.F.Z.12, and SIR 76 under licence from Steyr. The Audi plant employed some 3,000 and the Horch some 4,000 workers before the war.

Friemann & Wolff G.m.b.H./

ZWICKAU (contd.)

Friemann & Wolff G.m.b.H. Reichenbacherstr. (-)

This firm manufactures machine tools, accumulators, M.T. components, and miners' safety lamps.

Gebr. Jacob Seilerstr. (3)

The Gebr. Jacob G.m.b.H. are manufacturers of domestic and industrial gas appliances. They employed some 500 workers before the war.

Maschinenfabrik Reichenbacherstr. (-)

The Zwickauer Maschinenfabrik A.G. are manufacturers of pumps, compressors, high-pressure containers, and other equipment for chemical works and synthetic-oil plants. Before the war they employed some 200 workers.

Hofmann & Zinkeisen Reichenbacherstr. (-)

The Hofmann & Zinkeisen G.m.b.H. are makers of mining machinery, machinery for brickworks, and ore-crushing apparatus. Their works include a small iron foundry, and employed some 200 workers before the war.

Herzig & Heymann Schneebergerstr.) (-)

C. Kohler Adolf Hitler Ring)

The above are two examples of a number of firms in Zwickau which specialise in the manufacture of all kinds of weighing machines.

Chemicals and Explosives

Louis Blumer Zwickau (-)

The firm of Louis Blumer is one of the chief German manufacturers of tar-acid resins. The chief products of their factory are Diphen and Laccain (tar-acid resins) and they also manufacture Duxol, Duxalkyd, Makopal, Resenoplast, Tallalkyd (Glyptals).

Textiles, Rayon, Pulp and Paper

Kammgarn Spinnerei Pölbitzerstr. (-)

The Zwickauer Kammgarn Spinnerei A.G. and their subsidiary firm the Baumwollspinnerei Zwickau A.G. have two adjacent spinning mills, each of which has 50,000 spindles. Approximately 1,000 workers were employed before the war.

INDEX A

Alphabetical index of towns described in Parts I and II.

Pages 1 to 421 comprise Part I:

Pages 422 to 757 comprise Part II.

<u>Town</u>	<u>Province</u>	<u>Page</u>
Aachen	Rhineland	1
Aalen	Württemberg	4
Ahlen	Westphalia	5
Aken	Saxony (Provinz)	5
Albbruck (near Waldshut)	Baden	5, 697
Allendorf	Hesse-Nassau	6
Allenstein	East Prussia	6
Alsdorf	Rhineland	7
Altdamm	Pomerania	8
Altena	Westphalia	8
Altenburg	Thuringia	10
Altona	Schleswig-Holstein	303
Altötting	Bavaria	10
Amberg	Bavaria	10
Ammendorf	Saxony (Provinz)	11
Andernach	Rhineland	11
Andreashütte	Silesia	12
Anklam	Pomerania	13
Annaberg	Saxony	13
Annahütte	Brandenburg	13
Ansbach	Bavaria	14
Arnimswalde	Pomerania	8
Arnsberg	Westphalia	14
Arnstadt	Thuringia	15
Aschaffenburg	Bavaria	15

<u>Town</u>	<u>Province</u>	<u>Page</u>
Aschersleben	Saxony (Provinz)	18
Aue	Saxony	18
Auerbach	Saxony	20
Augsburg	Bavaria	20
Augustenthal	Westphalia	23
Baden-Baden	Baden	24
Bad Godesberg	Rhineland	24
Bad Homburg	Hesse Nassau	24
Bad Kreuznach	Rhineland	25
Bad Oeynhausen	Westphalia	25
Bamberg	Bavaria	26
Barmen	Westphalia	737
Basdorf	Brandenburg	26
Bautzen	Saxony	27
Bayreuth	Bavaria	28
Belgard	Pomerania	28
Benrath	Rhineland	179
Bensberg	Rhineland	29
Bensheim	Hesse	29
Bergedorf	Hamburg	29
Bergheim	Rhineland	30
Bergisch-Gladbach	Rhineland	31
Berlin	Brandenburg	32
Bernburg	Anhalt	59
Betzdorf-Siegthal	Rhineland	60
Beuel	Rhineland	60
Beuthen	Silesia	61

Town
 Bielefeld
 Bingen
 Bitterfe
 Blechham
 Bocholt
 Bochum
 Böblinge
 Böhlen
 Blomitz
 Bonn
 Bottrop
 Bous
 Brackwe
 Branden
 Braubac
 Braunsb
 Brauns
 Brebach
 Bremen
 Bremerh
 Breslau
 Brieste
 Bruchsa
 Brühl
 Brunswi
 Buer/Su
 Bunslau
 Burbaci
 Burg

<u>Page</u>	<u>Town</u>	<u>Province</u>	<u>Page</u>
18	Bielefeld	Westphalia	65
18	Bingen	Hesse	68
20	Bitterfeld	Saxony (Provinz)	69
20	Blechhammer	Upper Silesia	75
23	Bocholt	Westphalia	76
	Bochum	Westphalia	76
24	Böblingen	Württemberg	84
24	Böhlen	Saxony	428
24	Bömlitz	Hanover	334
25	Bonn	Rhineland	85
25	Bottrop	Westphalia	86
26	Bous	Saar	87
77	Brackwede	Westphalia	87
26	Brandenburg	Brandenburg	89
27	Braubach	Rhineland	91
28	Braunsberg	East Prussia	91
28	Braunschweig	Brunswick	91
177	Brebach	Saar	593
29	Bremen	Free City	97
29	Bremerhaven	Hanover	103
29	Breslau	Silesia	105
30	Brieste	Brandenburg	619
31	Bruchsal	Baden	112
32	Brühl	Rhineland	112
33	Brunswick	Brunswick	91
33	Buer/Ruhr	Westphalia	260
34	Bunzlau	Silesia	113
34	Burbach	Saar	593
35	Burg	Saxony (Provinz)	113

<u>Town</u>	<u>Province</u>	<u>Page</u>
Burghausen	Bavaria	114
Burgstadt	Saxony	114
Burscheid	Rhineland	114
Cassel	Hesse-Nassau	381
Castrop-Rauxel	Westphalia	115
Celle	Hanover	117
Chemnitz	Saxony	118
Clausthal Zellerfeld	Hanover	124
Coblenz	Rhineland	393
Coburg	Bavaria	124
Cologne	Rhineland	396
Cosel	Silesia	414
Coswig	Anhalt	124
Coswig	Saxony	125
Cottbus	Brandenburg	125
Crimmitschau	Saxony	126
Cuxhaven	Hanover	126
Danzig	Free city	127
Darmstadt	Hesse	131
Datteln	Westphalia	134
Deggendorf	Bavaria	135
Demmin	Pomerania	135
Deschowitz	Upper Silesia	136
Dessau	Anhalt	137
Detmold	Lippe	139
Dillingen	Saar	139
Dinslaken	Rhineland	162

<u>Town</u>	<u>Province</u>	<u>Page</u>
Dittersbach	Silesia	695
Dobeln	Saxony	141
Donauwörth	Bavaria	141
Dormagen	Rhineland	141
Dortmund	Westphalia	142
Dreetz	Brandenburg	154
Dresden	Saxony	154
Duisburg	Rhineland	162
Dülken	Rhineland	176
Düren	Rhineland	176
Düneberg-Krömmel	Schleswig-Holstein	177
Düsseldorf	Rhineland	179
Eberswalde	Brandenburg	193
Ebingen	Württemberg	195
Ehrang	Rhine province	195
Eilenburg	Saxony	196
Eisenach	Thuringia	197
Eisenberg	Thuringia	198
Eiserfeld	Westphalia	623
Eisleben	Saxony	198
Elbing	East Prussia	199
Elmshorn	Schleswig-Holstein	200
Elberfeld	Westphalia	737
Elsnig	Saxony	672
Emden	Hanover	200
Emmendingen	Baden	201
Emmerich	Rhineland	202

<u>Town</u>	<u>Province</u>	<u>Page</u>
Emsdetten	Westphalia	202
Erfurt	Saxony	202
Erkenschwick	Westphalia	562
Erlangen	Bavaria	204
Eschwege	Hesse-Nassau	204
Eschweiler	Rhineland	205
Essen	Rhineland	207
Esslingen	Württemberg	657
Euskirchen	Rhineland	218
Falkensee	Brandenburg	219
Falkenstein	Saxony	219
Fallersleben	Hanover	219
Ferndorf	Westphalia	220
Finkenheerd	Brandenburg	221
Finnentrop	Westphalia	221
Finsterwalde	Brandenburg	221
Flensburg	Schleswig-Holstein	223
Forbach	Baden	224
Forst	Brandenburg	224
Fortuna	Rhineland	30
Frankenberg	Saxony	225
Frankenthal	Palatinate	225
Frankfurt/am/Main	Hesse Nassau	227
Frankfurt/Oder	Brandenburg	243
Frechen	Rhineland	244
Freiberg	Saxony	244
Freiburg	Baden	244

<u>Page</u>	<u>Town</u>	<u>Province</u>	<u>Page</u>
202	Freising	Bavaria	246
202	Freital	Saxony	246
562	Freyburg	Saxony	246
204	Friedberg	Hesse	247
204	Friedrichsfeld	Baden	247
205	Friedrichshafen	Wurttemberg	248
207	Fulda	Hesse Nassau	252
657	Fürstenhagen	Hesse Nassau	253
218	Fürstenwalde	Brandenburg	253
	Fürth	Bavaria	255
219	Furtwangen	Baden	256
219			
219	Gaggenau	Baden	257
220	Garmisch	Bavaria	257
221	Geislingen	Württemberg	257
221	Geisweid	Westphalia	258
221	Gelsenkirchen	Westphalia	260
223	Genshagen	Brandenburg	267
224	Genthin	Saxony	267
224	Gera	Thuringia	268
30	Gevelsberg	Westphalia	292
225	Giessen	Hesse	271
225	Gladbeck	Westphalia	271
227	Glatz	Silesia	272
243	Glauchau	Saxony	272
244	Glausig	Anhalt	416
244	Gleiwitz	Silesia	272
244	Glogau	Silesia	276

<u>Town</u>	<u>Province</u>	<u>Page</u>
Göppingen	Württemberg	276
Görlitz	Silesia	278
Goslar	Hanover	279
Gotha	Thuringia	281
Göttingen	Hanover	284
Greiffenberg	Silesia	285
Greifswald	Pomerania	285
Greiz	Thuringia	286
Grevenbroich	Rhineland	287
Gronau	Westphalia	287
Gross Kayna	Saxony (Provinz)	710
Grünberg	Silesia	288
Guben	Brandenburg	289
Gumbinnen	East Prussia	289
Gummersbach	Rhineland	290
Güstrow	Mecklenburg	291
Gütersloh	Westphalia	291
Hagen	Westphalia	292
Hainichen	Saxony	298
Halberstadt	Saxony (Provinz)	298
Halle	Saxony (Provinz)	299
Hamburg	Free city	303
Hameln	Hanover	328
Hamm	Westphalia	329
Hanau	Hesse Nassau	331
Hannover	Hanover	334
Hasslinghausen	Westphalia	292

<u>Town</u>	<u>Province</u>	<u>Page</u>
Hattingen	Westphalia	76
Häusern	Baden	697
Heidelberg	Baden	343
Heidenau	Saxony	344
Heidenheim	Württemberg	344
Heilbronn	Württemberg	345
Helmstedt	Brunswick	348
Hemfurth	Hesse Nassau	694
Henrichenburg	Westphalia	115
Herborn	Hesse Nassau	350
Herford	Westphalia	351
Herne	Westphalia	352
Hersfeld	Hesse Nassau	354
Hettstedt	Saxony	198
Heydebreck	Silesia	355
Hilden	Rhineland	355
Hildesheim	Hanover	355
Hindenburg	Silesia	357
Hirschberg	Silesia	360
Hirschfelde	Saxony	752
Höchst/Main	Hesse Nassau	327
Hof	Bavaria	361
Hohenlimburg	Westphalia	438
Hohenstein-Ernstthal	Saxony	362
Homburg	Rhineland	363
Homburg	Saar	364
Hoppecke	Westphalia	364
Hörselgau	Thuringia	365

<u>Town</u>	<u>Province</u>	<u>Page</u>
Koblenz	Rhineland	393
Kohlfurt	Saxony	394
Kolscheid	Rhineland	205
Kolberg	Pomerania	394
Köln am Rhein (Cologne)	Rhineland	396
Königsberg	East Prussia	408
Königshuld	Silesia	412
Konstanz	Baden	413
Kornwestheim	Württemberg	413
Kosel	Silesia	414
Köslin	Pomerania	415
Koswig	Anhalt	124
Koswig	Saxony	125
Kottbus	Brandenburg	125
Köthen	Anhalt	416
Kraiburg	Bavaria	482
Krefeld	Rhineland	417
Krimmitschau	Saxony	126
Krümml	Schleswig-Holstein	177
Kruppamühle	Silesia	419
Küstrin	Brandenburg	420
Lahr	Baden	422
Landau	Bavaria	422
Landsberg	Brandenburg	422
Landshut	Bavaria	423
Langenbiela	Silesia	423
Langenfeld	Rhineland	424

<u>Town</u>	<u>Province</u>	<u>Page</u>
Langerfeld	Rhineland	737
Lauban	Silesia	424
Laucherthal	Hohenzollern	627
Lauenberg	Pomerania	425
Lauta	Brandenburg	425
Lechfeld	Bavaria	426
Lehrte	Westphalia	427
Leipheim	Bavaria	683
Leipzig	Saxony	428
Leopoldshall	Saxony	643
Letmathe	Westphalia	438
Leverkusen	Rhineland	439
Liegnitz	Silesia	441
Limbach	Saxony	442
Limburg	Hesse-Nassau	443
Lindau	Bavaria	443
Lippstadt	Westphalia	443
Löbau	Saxony	444
Lörrach	Baden	444
Lübeck	Schleswig-Holstein	445
Luckenwalde	Brandenburg	449
Lüdenscheid	Westphalia	449
Ludwigsburg	Württemberg	450
Ludwigshafen	Bavaria	450
Ludwigshafen	Bavaria	463
Lüneburg	Hanover	451
Lützen	Westphalia	142
Lunow	Brandenburg	451

<u>Town</u>	<u>Province</u>	<u>Page</u>
Lüttringhausen	Rhineland	570
Lyck	East Prussia	452
Magdeburg	Saxony (Provinz)	453
Mainz	Hesse	459
Malapane	Silesia	461
Malchin	Mecklenburg	462
Malchow	Mecklenburg	462
Mannheim	Baden	463
Mansfeld	Saxony	198
Marburg	Hesse Nassau	472
Marienburg	East Prussia	472
Marl	Westphalia	473
Mayen	Rhineland	474
Mechernich	Rhineland	474
Meerane	Saxony	475
Meiningen	Thuringia	475
Meissen	Saxony	476
Melle	Hanover	476
Memmingen	Bavaria	477
Menden	Westphalia	477
Merseburg	Saxony (Provinz)	477
Mettmann	Rhineland	478
Meuselwitz	Thuringia	479
Minden	Westphalia	479
Mittweida	Saxony	480
Moers	Rhineland	480
Möhne Dam	Westphalia	630

<u>Town</u>	<u>Province</u>	<u>Page</u>
Mosbach	Baden	481
Mülldorf	Bavaria	482
Mühlhausen	Saxony (Provinz)	483
Mühlheim/Ruhr	Rhineland	484
Mühlheim	Rhineland	486
München (Munich)	Bavaria	487
München/Gladbach	Rhineland	497
Münster	Westphalia	498
Naumburg	Saxony (Provinz)	499
Neckarsulm	Württemberg	345
Neheim	Westphalia	499
Neisse	Silesia	499
Neubrandenburg	Mecklenburg	500
Neu Isenburg	Hesse	500
Neumünster	Schleswig Holstein	501
Neunkirchen	Saar	501
Neuruppin	Brandenburg	503
Neusalz	Silesia	503
Neuss	Rhineland	504
Neustadt	Bavaria	508
Neustadt-Clewe	Mecklenburg	508
Neustettin	Pomerania	508
Neustrelitz	Mecklenburg	508
Neuwied	Rhineland	509
Niedermarsberg	Westphalia	509
Nienburg a.d. Weser	Hanover	509
Niesky o/Lausitz	Silesia	510
Nordenham	Oldenburg	510

<u>Town</u>	<u>Province</u>	<u>Page</u>
Nordhausen	Saxony (Provinz)	511
Nordhorn	Hanover	513
Nürnberg	Bavaria	514
Oberhausen	(Rhineland)	521
Obernburg/Main	Bavaria	526
Oberndorf	Württemberg	526
Obernkirchen	Hanover	527
Oberscheld	Hesse Nassau	527
Oberursel	Hesse Nassau	528
Oels	Silesia	528
Oelsnitz	Vogtland	529
Oestrich	Hesse-Nassau	529
Offenbach am Main	Hesse	529
Offenburg	Baden	534
Oldenburg	Oldenburg	534
Opladen	Rhineland	535
Oppau	Baden	463
Oppeln	Silesia	536
Oranienburg	Brandenburg. See Berlin	32
Ortelsburg	East Prussia	537
Oschersleben	Saxony (Provinz)	537
Osnabrück	Hanover	538
Osternienburg	Anhalt	541
Osterode	East Prussia	542
Paderborn	Westphalia	543
Parchim	Mecklenburg	543
Passau	Bavaria	544

<u>Town</u>	<u>Province</u>	<u>Page</u>
Passau	Bavaria	374
Peine	Hanover	544
Peiskretscham	Silesia	545
Petersdorf	Silesia	545
Pforzheim	Baden	546
Piesteritz	Saxony (Provinz)	548
Pillau	East Prussia	549
Pinneberg	Holstein	550
Pimmasens	Bavaria	550
Pirna	Saxony	551
Planitz	Saxony	551
Plauen	Saxony	552
Plettenburg	Westphalia	553
Porz	Rhineland	396
Pörsneck	Thuringia	553
Potsdam	Brandenburg	554
Premnitz	Brandenburg	554
Prenzlau	Brandenburg	555
Quedlinburg	Saxony (Provinz)	556
Radeberg	Saxony	557
Radebeul	Saxony	557
Ragnit	East Prussia	671
Rastatt	Baden	559
Rastenburg	East Prussia	559
Rathenow	Brandenburg	560
Ratibor	Silesia	561
Ratingen	Rhineland	179
Rauxel	Westphalia	115

<u>Town</u>	<u>Province</u>	<u>Page</u>
Ravensburg	Württemberg	562
Recklinghausen	Westphalia	562
Regensburg	Bavaria	566
Reichenbach	Saxony	569
Reichenbach	Silesia	569
Reigersfeld	Upper Silesia	75
Reinsdorf	Saxony (Provinz)	672
Remscheid	Rhineland	570
Rendsburg	Schleswig-Holstein	574
Repeln-Baerl	Rhineland	575
Reutlingen	Württemberg	575
Rheine	Westphalia	575
Rheinfelden	Baden	576
Rheydt	Rhineland	578
Riesa	Saxony	579
Ronneburg	Thuringia	580
Rosenheim	Bavaria	581
Rosswein	Saxony	582
Rostock	Mecklenburg	582
Rottweil	Württemberg	586
Rudolstadt	Thuringia	586
Ruhla	Thuringia	587
Ruhland-Schwarzheide	Saxony	619
Ruhr	Rhineland/Westphalia	588
Rummenohl	Westphalia	589
Rüsselsheim	Hesse	589
Saalfeld	Thuringia	591
Saarbrücken	Saar	592
Saarlautern	Saar	597

<u>Town</u>	<u>Province</u>	<u>Page</u>
Sagan	Silesia	598
Salzgitter	Hanover	599
Salzwedel	Saxony (Provinz)	600
Sangerhausen	Saxony (Provinz)	600
St. Ingbert	Saar	601
St. Wendel	Saar	602
Schkeuditz	Saxony (Provinz)	602
Schkopau	Saxony (Provinz)	602
Schlebusch	Rhineland	603
Schluchsee	Baden	603
Schleswig	Schleswig Holstein	604
Schneidemühl	Pomerania	604
Schönebeck	Saxony	605
Schoningen	Brunswick	606
Sohramberg	Württemberg	607
Schwabach	Bavaria	609
Schwäbisch-Gmünd	Württemberg	609
Schwäbisch-Hall	Württemberg	610
Schwandorf	Bavaria	610
Schweidnitz	Silesia	611
Schweinfurt	Bavaria	612
Schwelm	Westphalia	615
Schwenningen	Württemberg	616
Schwerin	Mecklenburg	617
Schwerte	Westphalia	618
Senftenberg	Brandenburg	619
Siegburg	Rhineland	622
Siegen	Westphalia	623
Siegmarschönau	Saxony	118, 627
Sigmaringen	Hohenzollern	627
Sindelfingen	Württemberg	627

586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627

<u>Town</u>	<u>Province</u>	<u>Page</u>
Singen	Baden	628
Soest	Westphalia	630
Solingen	Westphalia	632
Sammerda	Saxony (Provinz)	636
Sammerfeld	Brandenburg	636
Sonneberg	Thuringia	637
Sonneburg	Brandenburg	637
Sorau	Brandenburg	638
Speyer	Bavaria	639
Spremberg	Brandenburg	639
Stade	Hanover	641
Stadeln	Bavaria	641
Stargard	Pomerania	642
Stassfurt	Saxony (Provinz)	643
Stendal	Saxony (Provinz)	644
Stettin	Pomerania	645
Stockstadt	Bavaria	652
Stolberg	Rhineland	653
Stolp	Pomerania	655
Stralsund	Pomerania	655
Straubing	Bavaria	656
Striegau	Silesia	656
Stuttgart	Württemberg	657
Suhl	Saxony (Provinz)	667
Swinemünde	Pomerania	669
Tabarz	Thuringia	701
Teichwolframsdorf	Thuringia	670
Teningen	Baden	670
Thale	Saxony (Provinz)	670
Tilsit	East Prussia	671

<u>Town</u>	<u>Province</u>	<u>Page</u>
Todtnau	Baden	672
Torgau	Saxony (Provinz)	672
Trebbin	Brandenburg	673
Trier	Rhineland	673
Trostberg	Bavaria	674
Tübingen	Württemberg	675
Tuttlingen	Württemberg	676
Tuttow	Pomerania	676
Uecker ["] münde	Pomerania	678
Uelzen	Hanover	678
Uerdingen-Rhine	Rhineland	679
Ulm	Württemberg	683
Unna	Westphalia	687
Vacha	Thuringia	688
Varel	Oldenburg	688
Velbert	Rhineland	688
Velten	Brandenburg	690
Viersen	Rhineland	691
Villingen	Baden	691
Vockerode	Anhalt	693
Volklingen	Saar	693
Walchensee	Bavaria	694
Waldeck	Hess Nassau	694
Waldenburg	Silesia	695
Waldshut	Baden	697
Walsrode	Hanover	700
Waltershausen	Thuringia	701
Wanne Eickel	Westphalia	701

<u>Town</u>	<u>Province</u>	<u>Page</u>
Waren	Mecklenburg	704
Warnemünde	Mecklenburg	704
Wasseraffingen	Württemberg	705
Wattenscheid	Westphalia	705
Weida	Thuringia	706
Weiden	Bavaria	707
Weimar	Thuringia	707
Weinheim	Baden	709
Weissenfels	Saxony (Provinz)	709
Weissig	Saxony	711
Weisstein	Silesia	712
Wenzendorf	Hanover	712
Werdau	Saxony	712
Werder	Brandenburg	714
Werdohl	Westphalia	714
Wernigerode	Saxony (Province)	715
Wertheim	Baden	716
Wesel	Rhineland	716
Wesseling	Rhineland	717
Westerland	Schleswig Holstein	718
Wetzlar	Hesse Nassau	718
Wiesbaden	Hesse Nassau	721
Wildflecken	Bavaria	723
Wilhelmshaven	Oldenburg	724
Wismar	Mecklenburg	726
Witten	Westphalia	728
Wittenberg	Saxony (Provinz)	732
Wittenberge	Brandenburg	733
Wolfenbüttel	Brunswick	734
Wolfratshausen	Bavaria	735
Wolfratshausen	Bavaria	487

I N D E X B

Alphabetical index of suburbs and outlying localities.

Pages 1 to 421 comprise Part I:

Pages 422 to 757 comprise Part II.

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Abtnaundorf	Leipzig, Saxony	432
Achterwehr	Kiel, Schleswig-Holstein	389
Adlershof	Berlin, Brandenburg	43 57
Ahlem	Hanover, Hanover	335
Allach	Munich, Bavaria	490 491
Allmansweiler	Friedrichshafen, Württemberg	248
Alten	Dessau, Anhalt	137
Altenbauna	Kassel, Hesse Nassau	382
Altendorf	Chemnitz, Saxony	118
Altenstadt	Geislingen, Württemberg	257 258
Altessen	Essen, Rhineland	217
Altona	Hamburg	305 307 308 311 314 321 323 326
Alt Salbke	Magdeburg, Saxony	458
Altwasser	Waldenburg, Silesia	696
Amöneburg	Mainz, Hesse also Wiesbaden	460 723
Am Radeland	Hamburg	319
Am Seeberg	Gotha, Thuringia	282
Am Stadthof	Rathenow, Brandenburg	560
Am Stadholz	Bielefeld, Westphalia	66

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
A.d.Schneidemühle	Danzig	130
Annahof	Berlin, Brandenburg	44
Annen	Witten, Westphalia	730
Arnimswalde	Altdamm, Pomerania	8
Asslar	Wetzlar, Hesse-Nassau	720
Aue	Eschweiler, Rhineland	206
Auehammer	Aue, Saxony	19
Aufkirchen	Munich, Bavaria	489
Augst-Wyhlen	Waldshut, Baden	697
Babelsberg	Berlin, Brandenburg	44
Bad Cannstatt	Stuttgart, Württemberg	658 660 665 666 666a
Badenstedt	Hanover	340
Bad Salzelman	Schönebeck, Province Saxony	605
Baesweiler	Aachen, Rhineland	2
Bahrenfeld	Hamburg	319 314 317 320
Baierbrunn	Munich, Bavaria	491
Baldeney	Essen, Rhineland	211
Barmbeck	Hamburg	305 307 308 316 320 321 323
Barmen	Wuppertal, Rhineland	737 738 739 740 741

INDEX B

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Barsinghausen	Hanover	336
Bayenthal	Köln, Rhineland	403
Beeckerwerth	Duisburg, Rhineland	164
Benrath	Düsseldorf, Rhineland	180 186 189 191
Bergeborbeck	Essen, Rhineland	215
Bergedorf	Hamburg	321
Berghausen	Remscheid, Rhineland	572
Bergkamen	Dortmund, Westphalia	145 149
Bettenhausen	Kassel, Hesse-Nassau	382 384 385
Beyenburg	Hagen, Westphalia	297
Bickendorf	Köln, Rhineland	405
Biebrich	Wiesbaden, Hesse-Nassau	721
Billbrook	Hamburg	309 322 323
Billwärders Ausschlag	Hamburg	304 308
Bingerbrück	Bingen, Hesse	68
Binsfeldhammer	Stolberg, Rhineland	653 654
Birkengang	Stolberg, Rhineland	653
Bischofsheim	Mainz, Hesse	459
Bleihof	Danzig	128
Bleiloch	Saalfeld, Thuringia	591
Blexen	Nordenham, Oldenburg	510 511
Bliedinghausen	Remscheid, Rhineland	572 574
Blumenthal	Bremen, Oldenburg	98 101
Bobrek	Beuthen, Silesia	62

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Bobrek-Karf,	Beuthen, Silesia	61
		62
Bockau	Breslau, Silesia	105
Bockenheim	Frankfort/Main, Hesse Nassau	231
		236
		239
Bockwa	Zwickau, Saxony	756
Böhlen	Leipzig, Saxony	429
		431
Bohlitz	Leipzig, Saxony	434
Bömlitz	Walsrode, Hanover	700
Bönning	Herne, Westphalia	353
Borbeck	Essen, Rhineland	211
		212
		214
		215
Borken	Kassel, Hesse Nassau	382
Borsigwalde	Berlin, Brandenburg	47
		51
		53
		54
Bostelbeck	Hamburg	319
Brambauer	Dortmund, Westphalia	147
		148
Braunsfeld	Köln, Rhineland	399
		402
		405
		406
Brauweiler	Köln, Rhineland	398
Brebach	Saarbrücken, Saar	595
		596
Bredow	Stettin, Pomerania	650
		651
Bredow Werde	Stettin, Pomerania	651
Brink	Hanover	337
		338
Britz	Berlin, Brandenburg	33a
		45
		57
Buchberg	Munich, Bavaria	493

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Buckau	Magdeburg, Saxony	454
		456
		457
		458
Budenheim	Mainz, Hesse	461
Büderich-Heerd	Düsseldorf, Rhineland	185
Buer	Gelsenkirchen, Westphalia	260
		261
		263
		264
Burbach	Saarbrücken, Saar	594
Burgkammer	Saalfeld, Thuringia	591
Burgweide	Breslau, Silesia	111
Canstatt	Stuttgart, Württemberg	665
Charlottenburg	Berlin, Brandenburg	330
		35
		36
		38
		49
		52
		54
57		
Cosel	Breslau, Silesia	108
Curslack	Hamburg	309
Dalhausen	Bochum, Westphalia	77
Danischburg	Lübeck, Schleswig Holstein	448
Delbrück	Hindenburg, Silesia	358
Delitzsch	Leipzig, Saxony	429
Dellbrück	Köln, Rhineland	406
Delstern	Hagen, Westphalia	296
Derendorf	Düsseldorf, Rhineland	179
		183
Derne	Dortmund, Westphalia	144
		147

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Deutz	Köln, Rhineland	397
		399
		400
		401
		402
		403
		406
		407
Devau	Königsberg, East Prussia	410
Diesdorf	Magdeburg, Saxony	455
Dinslaken	Duisburg, Westphalia	166
		168
		169
Doelzschen	Dresden, Saxony	157
		161
Dogern	Waldshut, Baden	697
Döhren	Hanover	340
Dörlau	Greiz, Thuringia	286
Dollbergen	Peine, Hanover	544
Dombrowa	Beuthen, Silesia	63
Dorstfeld	Dortmund, Westphalia	143
		145
		146
Dortmunderfeld	Dortmund, Westphalia	143
		152
Durlach	Karlsruhe, Baden	379
		380
Eberstadt	Darmstadt, Hesse	132
Eckernförde	Kiel, Schleswig Holstein	392
Eglisau	Waldshut, Bavaria	697
Ehrenfeld	Cologne, Rhineland	399
		400
		402
		403
		404
Ehringhausen	Remscheid, Rhineland	573
Eibach	Herborn, Hesse-Nassau	350
Eibelstadt	Würzburg, Bavaria	744

Localit

Eichhoh

Eichhol

Eidelst

Eifelto

Eiserfe

Eisern

Eitting

Eiberfe

Elanig

Eupelde

Eusdorf

Eriker

Ekrath

Espenha

Essling

Ettritz

Eving

Fechen

Fellbe

Fenne

Feuert

Feuert

Finken

INDEX B

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Eichlicht	Saalfeld, Thuringia	591
Eichholz	Waldshut, Baden	698
Eidelstadt	Hamburg	322
Eifeltor	Cologne, Rhineland	396
Eiserfeld	Siegen, Westphalia	624
Eisern	Siegen, Westphalia	624
Eitting	Munich, Bavaria	489
Elberfeld	Wuppertal, Rhineland	737 738 739 740
Elsnig	Torgau, Province Saxony	672
Empelde	Hanover	339
Ensdorf	Saarlautern, Saar	596
Erkner	Berlin, Brandenburg	51
Erkrath	Düsseldorf, Rhineland	187
Espenhain	Leipzig, Saxony	430
Esslingen	Stuttgart, Wurttemberg	659 660 665 666
Eutritz	Leipzig, Saxony	432
Eving	Dortmund, Westphalia	143 144 145 148
Fechenheim	Frankfort a/Main, Hesse-Nassau	234 237 238
Fellbach	Stuttgart, Wurttemberg	666
Fenne	Völklingen, Saar	693
Feuerbach	Munich, Bavaria	495
Feuerbach	Stuttgart, Wurttemberg	659 662 666a
Finkenwärd ⁿ	Hamburg	315 317

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Finow	Eberswalde, Brandenburg	193
		194
Finsing	Munich, Bavaria	489
Fischbach	Saarbrücken, Saar	595
Flenbruder See	Kiel, Schleswig Holstein	389
Flemhude	Kiel, Schleswig Holstein	389
Flingern	Düsseldorf, Rhineland	180
		185
		187
Freimann	Munich, Bavaria	488
		491
Friedenau	Berlin, Brandenburg	52
		56
Friedewalde	Breslau, Silesia	110
Friedrichsfelde	Berlin, Brandenburg	37
Friedrichshain	Berlin, Brandenburg	42
Friedrichsort	Kiel, Schleswig Holstein	391
Friedrichstadt	Dresden, Saxony	155
Frillendorf	Essen, Rhineland	213
Frintrop	Essen, Rhineland	210
Fühlsbüttel	Hamburg	320
Fürstenhausen	Saarbrücken, Saar	595
Gaarden	Kiel, Schleswig Holstein	390
		391
Gandau	Breslau, Silesia	107
Gars	Mühlendorf, Bavaria	482
Gartenfeld	Berlin, Brandenburg	46
Gebersdorf	Nuremberg, Bavaria	515
Geisecke	Schwerke, Westphalia	618
Gendorf	Altötting, Bavaria	10
Georgs-Marien Hütte	Osnabrück, Hanover	539
		540

Localit

Gereon

Gerstho

Gerthe

Gerthe-

Gesundb:

Gevelsb

Giesing

Gliesma

Goldsch

Golpa-Z

Gosenh

Gosenbe

GotsLow

Grabow

Grabro

Grenber

Grieshe

Grödit

Gross I

Gross I

Gr. Kul

A. d. G

Grossz

Grtnau

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Gereon	Cologne, Rhineland	397
Gersthofen	Augsburg, Bavaria	20
Gerthe	Bochum, Westphalia	78 80 83
Gerthe-Heide	Bochum, Westphalia	78 83
Gesundbrunnen	Berlin, Brandenburg	33c
Gevensberg	Hagen, Westphalia	293 295 296 297
Giesing	Munich, Bavaria	493
Gliesmarode	Braunschweig, Brunswick	96
Goldschmieden	Breslau, Silesia	110
Golpa-Zschornowitz	Bitterfeld, Province Saxony	69 74
Gonsenheim	Mainz, Hesse	460
Gosenbach	Siegen, Westphalia	624
Gotzlow	Stettin, Pomerania	648
Grabow	Stettin, Pomerania	649 650
Grasbrook	Hamburg	309 312 313
Grenberg	Köln, Rhineland	397
Griesheim	Frankfort a/Main, Hesse-Nassau	231 234 240
Gröditz	Riesa, Saxony	579
Gross Borstell	Hamburg	317
Gross Ilsede	Peine, Hanover	544
Gr. Kuhnau	Dessau, Anhalt	138
A.d. Gr.Mühle	Danzig	130
Grosszschocher	Leipzig, Saxony	432
Grünau	Berlin, Brandenburg	44 48

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Grünwald	Berlin, Brandenburg	33a
Günne	Soest, Westphalia	630
Gustavsburg	Mainz, Hesse	460
Gutaoor	Hamburg	305 307
Haddenbach	Remscheid, Rhineland	573
Hallendorf	Braunschweig, Brunswick	92 93
Hamborn	Duisburg, Rhineland	164 165 166 167 168 173 175
Hamborn-Alsum	Duisburg, Rhineland	165 169
Hamme	Bochum, Westphalia	79 80
Hapsburger Ring	Kiel, Schleswig-Holstein	392
Harbke	Helmstedt, Brunswick	349
Harburg	Hamburg	304 312 322 323 324 325 326 327
Harkortsee	Witten, Westphalia	729
Haselhorst	Berlin, Brandenburg	54
Haspe	Hagen, Westphalia	293 294 297
Hassee	Kiel, Schleswig-Holstein	391
Hastedt	Bremen, Oldenburg	98 99 101
Hasten	Remscheid, Rhineland	571 573

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Hattingen	Bochum, Westphalia	77
		79
		82
Häusern	Waldshut, Baden	698
Havermühle	Eschweiler, Rhineland	206
Heddernheim	Frankfort a/Main, Hesse Nassau	232
		235
Heerdt	Düsseldorf, Rhineland	180
		184
		187
		189
		191
		507
	Neuss, Rhineland	
Heessen	Hamm, Westphalia	331
Heidburg	Solingen, Rhineland	634
Heinholz	Hanover	334
Heinrichshall	Gera, Thuringia	269
Heissen	Mülheim (Ruhr), Rhineland	484
Heiterblick	Leipzig, Saxony	432
Hellbrook	Hamburg	316
Hemelingen	Bremen, Oldenburg	99
Hengstey	Hagen, Westphalia	293
		728
Hengsteysee	Witten, Westphalia	728
Hermigsdorf	Berlin, Brandenburg	48
Henrichenburg	Castrop-Rauxel, Westphalia	115
		Dortmund, Westphalia
Herdorf	Betzdorf, Rhineland	60
Herdorf	Siegen, Westphalia	624
Herrenhausen	Hanover	335
		340
Herrenwyk	Lübeck, Schleswig-Holstein	446
Herrnhütte	Nuremberg, Bavaria	514
Heufeld	Rosenheim, Bavaria	581
Hilbersdorf	Chemnitz, Saxony	118
Hiltrop-Wanne	Bochum, Westphalia	78
		80

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Hirschfelde	Zittau, Saxony	752
		753
Hochfeld	Duisburg, Rhineland	166
		171
		172
		173
		174
		175
Hochlarmark	Recklinghausen, Westphalia	564
Höchst	Frankfort a/Main, Hesse Nassau	231
		241
Hohenbudberg	Uerdingen-Rhine, Rhineland	679
Hoheneck	Stuttgart, Wurttemberg	659
Hohenwarte	Saalfeld, Thuringia	591
Höllriegelskreuth	Munich, Bavaria	494
		495
Der Holm	Danzig	129
Holsterhausen	Wanne Eickel, Westphalia	703
Holtenuau	Kiel, Schleswig-Holstein	387
Holzfeld	Trostberg, Bavaria	674
Holzwickede	Dortmund, Westphalia	144
Hörde	Dortmund, Westphalia	144
		147
		150
Hordel	Wanne Eickel, Westphalia	702
Horrem	Köln, Rhineland	404
Horst	Gelsenkirchen, Westphalia	261
		264
Huckarde	Dortmund, Westphalia	146
Hückingen	Duisburg, Rhineland	166
		170
		172
Hüls	Marl, Westphalia	473
Hundsfeld	Breslau, Silesia	109
Hunscheidtsfeld	Bochum, Westphalia	83
Hürth	Cologne, Rhineland	398

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Ickern	Castrop-Rauxel, Westphalia	115
Ilseburg-Harz	Wernigerode, Province Saxony	715
Immigrath	Langenfeld, Rhineland	424
Im Schwenkrain	Stuttgart, Wurttemberg	661
Isartal	Munich, Bavaria	488
Johannisthal	Berlin, Brandenburg	33b 42 45
Johannstadt	Dresden, Saxony	156
Kabel	Hagen, Westphalia	296
Kadelburg	Waldshut, Baden	697
Käfertal	Mannheim, Baden	467
Karlowitz	Breslau, Silesia	110
Kalk	Cologne, Rhineland	396 401 402 405
Kalscheuren	Cologne, Rhineland	405
Kamen	Dortmund, Westphalia	145 147
Kappel	Chemnitz, Saxony	118
Karlowitz	Breslau, Silesia	110
Karnap	Essen, Rhineland	210 213
Kaufbeuren	Munich, Bavaria	494
Kelheim	Regensburg, Bavaria	568
Kelsterbach	Frankfort a/Main, Hesse-Nassau	250
Kenton	Bergheim, Rhineland	31
Ketschendorf	Furstenwalde, Brandenburg	254 255
Kirchlinde	Dortmund, Westphalia	148
Kirchweyhe	Bremen, Oldenburg	97
Klafeld	Geisweid, Westphalia	259

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Klausthal	Goslau, Hanover	280
Kleiner Grasbrook	Hamburg	305
Klein Kühnau	Dessau, Anhalt	137
Klein-Machnow	Berlin, Brandenburg	44
Klein-Wittenburg	Piesteritz, Province Saxony	549
Klettenberg	Cologne, Rhineland	399
Klietz	Stendal, Province Saxony	645
Klingenberg	Berlin, Brandenburg	35
Kohlscheid	Eschweiler, Rhineland	205
Königsdorf	Marienburg, East Prussia	472
Konz-Karthaus	Trier, Rhineland	674
Köpenick	Berlin, Brandenburg	56 57
Kraftborn	Breslau, Silesia	105
Kraiburg	Mühdorf, Bavaria	483
Kratzwieck	Stettin, Pomerania	648 649 651
Kray	Essen, Rhineland	213 214 217
Kruckel	Witten, Westphalia	729
Kuchen	Geislingen, Wurttemberg	258
Kulkwitz	Leipzig, Saxony	430
Kummersdorf	Hirschberg, Silesia	361
Kupferdreh	Essen, Rhineland	210 211
Laatzen	Hanover	336
Laband	Gleiwitz, Silesia	275
Lamme	Braunschweig, Brunswick	94
Langelsheim	Goslau, Silesia	280
Langenbockum	Recklinghausen, Westphalia	564

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Langendreer	Bochum, Westphalia	77
		79
		83
Langenfelde	Hamburg	305
Langerfeld	Wuppertal, Rhineland	739
		741
Langfuhr	Danzig	130
Langenhorn	Hamburg	319
Lauenthal	Danzig	128
Laucherthal	Signaringen, Hohenzollern	627
Lauchhammer	Senftenberg, Brandenburg	620
		621
Laufenburg	Waldshut, Baden	697
Lauwetter	Suhl, Saxony	668
Leegetor	Danzig	128
Leinhausen	Hanover	335
		339
Leisewitz	Hanover	338
Lemwerder	Bremen, Oldenburg	100
Leopoldshall	Stassfurt, Province Saxony	643
Leuna	Merseburg, Province Saxony	477
		478
Leutzsch	Leipzig, Saxony	451
		432
Lederheide	Bremerhaven, Hanover	103
Leipheim	Ulm, Wurttemberg	684
Lichtenberg	Berlin, Brandenburg	33c
		33d
		38
		39
		40
		42
		46
		50
		51
		54
55		
Liebschwitz	Gera, Thuringia	268
Lierenfeld	Düsseldorf, Rhineland	182
		186
		187

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Limmer	Hanover	340
Linde	Bochum, Westphalia	83
Linden	Hanover	334 336 337 339 340
Lindenau	Leipzig, Saxony	437
Lindenhorst	Dortmund, Westphalia	145
Linn	Uerdingen, Rhineland	681 682
Lippholthausen	Dortmund, Westphalia	151
Lobstedt	Jena, Thuringia	373
Loewenthal	Friedrichshafen, Wurttemberg	248
Lohausen	Düsseldorf, Rhineland	188
Lokstedt	Hamburg	321
Luisenthal	Saarbrücken, Saar	595
Lölsdorf-Porz	Cologne, Rhineland	402
Lönen	Dortmund, Westphalia	144 147 148 151 152
Lättringhausen	Remscheid, Rhineland	571 573 574
Luzenberg	Mannheim, Baden	466
Mainkur	Frankfort a/Main, Hesse-Nassau	239 240
Madüsee	Stargard, Pomerania	643
Mangerburg	Solingen, Rhineland	633
Mansfeld	Eisleben, Saxony	198
Manzell	Friedrichshafen, Wurttemberg	249
Marbach	Stuttgart, Wurttemberg	658
Margarethenberg	Trostberg, Bavaria	674

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Mariendorf	Berlin, Brandenburg	40 51 52 56
Marienehe	Rostock, Mecklenburg	584
Marienfelde	Berlin, Brandenburg	48 55
Marienwerder	Hanover	341
Meiderich	Duisburg, Rhineland	165 168 169 170
Miechowitz	Beuthen, Silesia	63
Milspe	Hagen, Westphalia	295
Misburg	Hanover	336 339
Mittelfeld	Kassel, Hesse-Nassau	384
Moabit	Berlin, Brandenburg	33b 36
Mockau	Leipzig, Saxony	432 433
Mölbis	Leipzig, Saxony	430
Mombach	Mainz, Hesse	461
Monheim	Cologne, Rhineland	399
Mönkeberg	Kiel, Schleswig-Holstein	389
Moorfleth	Hamburg	317
Moosach	Munich, Bavaria	492
Mörs	Homburg, Rhineland	363
Mückenberg	Senftenberg, Brandenburg	620
Mundenheim	Mannheim, Baden	466
Münsterbusch	Stolberg, Rhineland	653 654
Mülheim	Cologne, Rhineland	400 401 407

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Neckerau	Mannheim, Baden	464 468 469
Neckasulm	Heilbronn, Wurttemberg	346
Neuaubing	Munich, Bavaria	488 490
Neubabelsberg	Berlin, Brandenburg	42
Neuendorf	Brandenburg, Brandenburg	90
Neufährwasser	Danzig	128
Neu Freimann	Munich, Bavaria	489
Neuhof	Hamburg	306 325
Neu-Isenburg	Frankfort/Main, Hesse-Nassau	240
Neukirchen	Moers, Rhineland	480
Neukölln	Berlin, Brandenburg	330 38 39 43 51 55
Neumark	Weissenfels, Province Saxony	710
Neumühlen	Hamburg	307
Neumühlen	Kiel, Schleswig-Holstein	391 392
Neu Schultenhof	Duisburg, Rhineland	164
Neuscheidt	Saarbrücken, Saar	596
Neustadt	Bremen, Oldenburg	98 101
Neustadt	Magdeburg, Saxony	455
Neuweide	Gleiwitz, Silesia	273
Nied	Frankfort/Main, Hesse-Nassau	227
Niederaussem	Bergheim, Rhineland	30
Niederfinow	Eberswalde, Brandenburg	193
Nieder Hermsdorf	Waldenburg, Silesia	695
Niederrad	Frankfort/Main, Hesse-Nassau	240
Niedersedlitz	Dresden, Saxony	156 158
Niederschöneweide	Berlin, Brandenburg	41 53

INDEX B

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Niederwartha	Radebeul, Saxony	557
Niederzwehren	Kassel, Hesse-Nassau	384
Niehl	Cologne, Rhineland	397 405
Niendorf	Lübeck, Schleswig-Holstein	446
Nievenheim	Düsseldorf, Rhineland	183 191
Nippes	Cologne, Rhineland	397 404 406
Nothberg	Eschweiler, Rhineland	205
Nünchritz	Weissenfels, Province Saxony	711
Nürtingen	Stuttgart, Wurttemberg	659
Obengönrath	Solingen, Rhineland	634
Oberaussem	Bergheim, Rhineland	30
Ober-Barmen	Wuppertal, Rhineland	738
Oberbilk	Düsseldorf, Rhineland	184 185 186, 188, 189, 191
Oberhohndorf	Zwickau, Saxony	756
Oberkassel	Düsseldorf, Rhineland	184 189
Oberlahnstein	Koblenz, Rhineland	394
Oberpfaffenhofen	Munich, Bavaria	490 491
Oberrad	Frankfort/Main, Hesse-Nassau	236
Oberschlema	Aue, Saxony	19
Oberschöneweide	Berlin, Brandenburg	37a 41 42 46 47 51 53
Obertraubling	Regensburg, Bavaria	567
Oberwiesenfeld	Munich, Bavaria	490 492
Ochsensoll	Hamburg	319

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Odermünde	Stettin, Pomerania	651
Oelide	Wuppertal, Rhineland	741
Oer-Erkenschwick	Recklinghausen, Westphalia	563 565
Oespel	Dortmund, Westphalia	146
Ohligs	Solingen, Rhineland	632 633 634 635
Oker	Goslau, Hanover	280
Olivaer Tor	Danzig	127
Oppau	Mannheim, Baden	468
Oppum	Krefeld, Rhineland	417
Oranienburg	Berlin, Brandenburg	44 58
Orianiendamm	Berlin, Brandenburg	45
Oslebshausen	Bremen, Oldenburg	98 99
Osterfeld	Oberhausen, Rhineland	521
Ostermoor	Hamburg	313
Ost-Herbede	Witten, Westphalia	731
Palve	Königsberg, East Prussia	408
Pankow	Berlin, Brandenburg	330
Faunsdorf	Leipzig, Saxony	429 433
Peute	Hamburg	310
Pfersee	Augsburg, Bavaria	22
Pfrombach	Munich, Bavaria	489
Pleschen	Dresden, Saxony	156
Flagwitz	Leipzig, Saxony	435 437
Flotzensee	Berlin, Brandenburg	41
Pohlau	Zwickau, Saxony	756
Pohlitz	Gera, Thuringia	269

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Pö ^l itz	Stettin, Pomerania	647 648
Poll	Cologne, Rhineland	403
Pommerensdorf	Stettin, Pomerania	647 652
Porz	Cologne, Rhineland	402 403 404
Preyersmühle	Remscheid, Rhineland	572
Prüfening	Regensburg, Bavaria	567
Quadrath	Bergheim, Rhineland	30
Querum	Braunschweig, Brunswick	94
Quirll's Mühle	Osnabrück, Hanover	541
Rackwitz	Leipzig, Saxony	430
Radbod	Hamm, Westphalia	331
Rähnitz-Hellerau	Dresden, Saxony	158
Rangsdorf	Berlin, Brandenburg	44
Rasselstein	Neuwied, Rhineland	509
Rath	Düsseldorf, Rhineland	180 183 184 187 189 191
Ratingen	Düsseldorf, Rhineland	187 188 190
Ratshof	Königsberg, East Prussia	409
Rebstock	Frankfort a/Main, Hesse-Nassau	235
Reckingen	Waldshut, Baden	697
Redenfelden	Rosenheim, Bavaria	582
Reick	Dresden, Saxony	156 158
Reigersfeld	Elechhammer, Upper Silesia	75

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Reinbeck	Hamburg	320
Reinickendorf	Berlin, Brandenburg	41 42 43, 50, 55
Reinsdorf	Wittenburg, Province Saxony	732
Reinshagen	Remscheid, Rhineland	573
Reisholz	Düsseldorf, Rhineland	181 182 186 189 191
Rheinau	Cologne, Rhineland	403 407
Rheinau	Mannheim, Baden	464 466 469 470
Rheinau	Waldshut, Baden	697
Rheinhausen	Duisburg, Rhineland	165 166 169
Rheinfelden	Waldshut, Baden	697
Ribnitz	Rostock, Mecklenburg	585
Rickenbach	Lindau, Bavaria	443
Riehl	Cologne, Rhineland	404
Riemke	Bochum, Westphalia	76 82
Rödelheim	Frankfort a/Main, Hesse-Nassau	238 239
Rodleben	Dessau, Anhalt	137
Rohrbach	Heidelberg, Baden	343
Röllinghausen	Recklinghausen, Westphalia	563 565
Rosenthal	Breslau, Silesia	111
Rossbach	Weissenfels, Province Saxony	710
Rosberg	Beuthen, Silesia	63
Rosslau	Dessau, Anhalt	138 139
Rothe Erde	Aachen, Rhineland	4
Rothenburgsort	Hamburg	304 309

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Rothenditmold	Kassel, Hesse-Nassau	384
Rothensee	Magdeburg, Saxony	454 455 456
Rottluff	Chemnitz, Saxony	124
Ruhland	Senftenberg, Brandenburg	620
Ruhrort	Duisburg, Rhineland	163 165 168 170
Rummelsburg	Berlin, Brandenburg	33c 36 41 48 58
Rüstringen	Wilhelmshaven, Oldenburg	726
Ryburg-Schwörstadt	Waldshut, Baden	697
Saale	Saalfeld, Thuringia	591
Saarau	Schweidnitz, Silesia	611
Sackheim	Königsberg, East Prussia	411
Säckingen	Waldshut, Baden	697
Salbke	Magdeburg, Saxony	454 457 458
St. Johann	Saarbrücken, Saar	596
St. Lorenz-Süd	Lübeck, Schleswig-Holstein	447
Schalchen	Trostberg, Bavaria	674 675
Schalke	Gelsenkirchen, Westphalia	260 261 265
Scheibenhardt	Karlsruhe, Baden	378
Schellmühl	Danzig	128 130
Schildesche	Bielefeld, Westphalia	67
Schluchsee	Waldshut, Baden	698
Schlutup	Lübeck, Schleswig-Holstein	448
Schmidthorst	Duisburg, Rhineland	164

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Schmiedefeld	Breslau, Silesia	109
A. d. Schneidemühle	Danzig	130
Schomberg	Beuthen, Silesia	61 62
Schönau	Chemnitz, Saxony	119 121
Schönau	Leipzig, Saxony	437
Schönebeck	Berlin, Brandenburg	44
Schöneberg	Berlin, Brandenburg	37a 38 40 49
Schönefeld	Berlin, Brandenburg	44 45
Schönefeld	Kassel, Hesse-Nassau	383
Schöneweide	Berlin, Brandenburg	33b
Schulau	Hamburg	307 313
Schwarza	Rostock, Mecklenburg	587
Schwarzheide	Senftenburg, Brandenburg	620 621
Schwelm	Hagen, Westphalia	295 297
Schierstein	Wiesbaden, Hesse-Nassau	723
Schwelzern	Duisburg, Rhineland	164
Schwetzingen	Mannheim, Baden	464 466
Sebaldsbrück	Bremen, Oldenburg	98 101
Seckbach	Frankfort/Main, Hesse-Nassau	236
Seegeritz	Leipzig, Saxony	433
Seelze	Hanover, Hanover	334
Sendling	Munich, Bavaria	493
Siegmar	Chemnitz, Saxony	118 119 121
Siems	Lübeck, Schleswig-Holstein	445

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Siemenstadt	Berlin, Brandenburg	46 47 52
Sinsen	Marl, Westphalia	473
Sodingen	Herne, Westphalia	353 354
Somborn	Witten, Westphalia	730
Sonnenberg	Chemnitz, Saxony	118
Sörnnewitz	Meissen, Saxony	476
Sosnitza	Gleiwitz, Silesia	273
Spandau	Berlin, Brandenburg	33 37 41 42 43 47 52 56
Speldorf	Mülheim (Ruhr), Rhineland	484
Spindlersfeld	Berlin, Brandenburg	57
Sporbitz	Dresden, Saxony	157
Stabelwitz	Breslau, Silesia	111
Steglitz	Berlin, Brandenburg	52
Steigerforst	Erfurt, Saxony	204
Steiner am Hart	Mühlendorf, Bavaria	483
Steinwärd ^{er}	Hamburg	315 316 317
Steele	Essen, Rhineland	217
Stellingen	Hamburg	305 320
Sterkrade	Oberhausen, Rhineland	523 524
Sterkrade-Holten	Oberhausen, Rhineland	521 522 523 524
Stöcken	Hanover	338
Stockum	Hamm, Westphalia	330

INDEX B

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Strausberg	Berlin, Brandenburg	45 56
Suchsdorf	Kiel, Schleswig-Holstein	387
Sulsbach	Saarbrücken, Saar	594 595
Suderwich	Recklinghausen, Westphalia	563 565
Tabarz	Waltershausen, Thuringia	701
Tacherting	Trostberg, Bavaria	674
Taucha	Leipzig, Saxony	433
Tegel	Berlin, Brandenburg	39 45
Teltow	Berlin, Brandenburg	43
Tempelhof	Berlin, Brandenburg	33a 40 43 49 51 53 54 55 58
Teufelsbruck	Mühlendorf, Bavaria	482
Tiefstack	Hamburg	305 308
Tiengen	Waldshut, Baden	698
Töging	Mühlendorf, Bavaria	482
Trattendorf	Spremberg, Brandenburg	640
Treptow	Berlin, Brandenburg	33d 49
Tröglitz	Zeitz, Province Saxony	748
Troisdorf	Siegburg, Rhineland	622
Troyl	Danzig	129
Tschechnitz	Breslau, Silesia	105

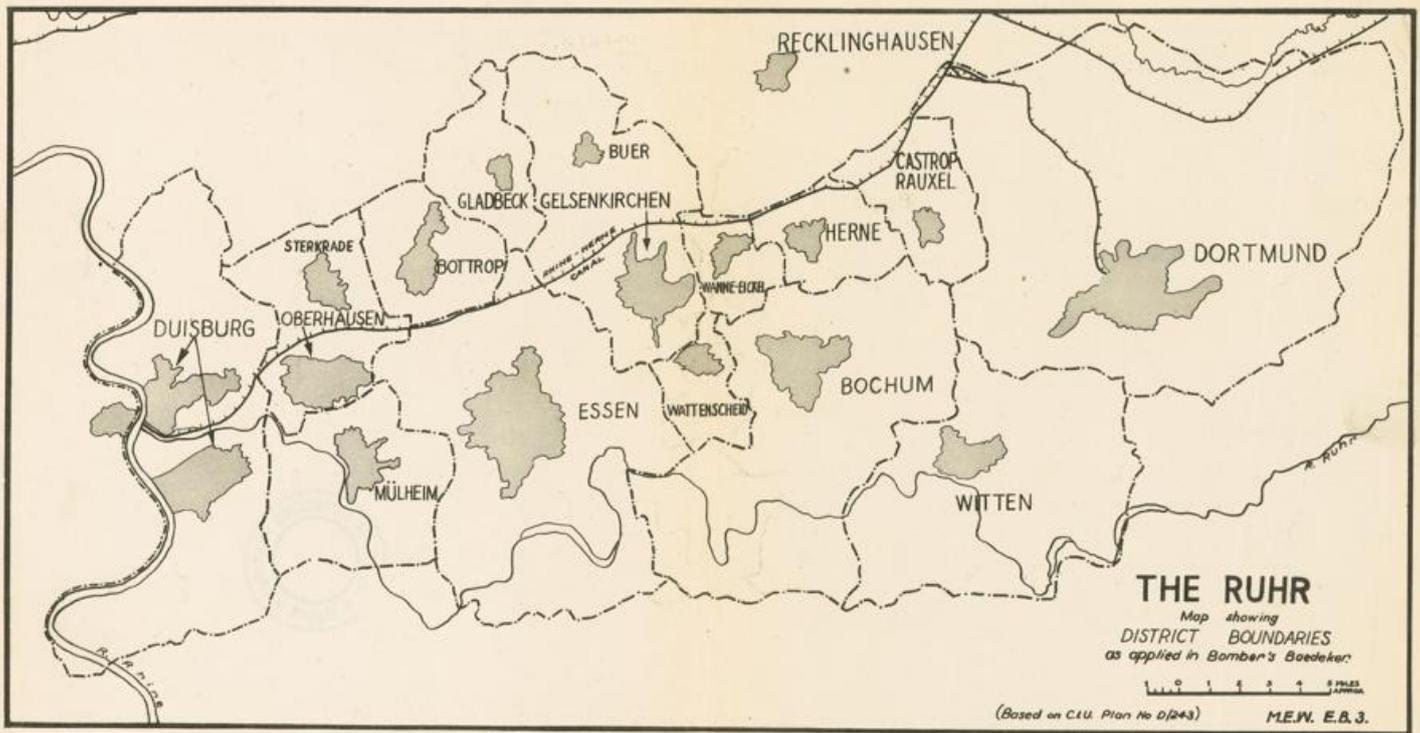
<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Übach-Palenberg	Aachen, Rhineland	2
Übek	Berlin, Brandenburg	44
Unterbilk	Düsseldorf, Rhineland	180 189
Unterdürrbacher	Würzburg, Bavaria	743
Unterspree	Berlin, Brandenburg	37a
Untertürkheim	Stuttgart, Wurttemberg	657 661 666a
Unterwellenborn	Saalfeld, Thuringia	592
Unterwieck	Stettin, Pomerania	652
Uppenborn	Munich, Bavaria	489
Veddel	Hamburg	326
Vegesack	Bremen	100
Vaihingen	Sindelfingen, Wurttemberg	628
Veltenhof	Braunschweig, Brunswick	92
Vieringhausen	Remscheid, Rhineland	572 573
Vohwinkel	Wuppertal, Rhineland	737
Vorhalle	Hagen, Westphalia	292 294
Vossbrook	Kiel, Schleswig-Holstein	389
Waggum	Braunschweig, Brunswick	94
Wahn	Cologne, Rhineland	404
Wahren	Leipzig, Saxony	429 435
Waiblingen	Stuttgart, Wurttemberg	666
Wald	Solingen, Rhineland	634
Waldau	Kassel, Hesse-Nassau	382
Waldhof	Mannheim, Baden	467 468 470

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Waltersdorf	Berlin, Brandenburg	44
Waltrop	Dortmund, Westphalia	143 146
Wambel	Dortmund, Westphalia	151 152
Wambelerholz	Dortmund, Westphalia	145 149
Wanheim	Duisburg, Rhineland	172 174
Wanheimerort	Duisburg, Rhineland	169 174
Wandsbeck	Hamburg	319 314 323 324
Wasser-Alfingen	Aalen, Wurttemberg	4
Wasserburg	Mühdorf, Bavaria	482
Wedau	Duisburg, Rhineland	163
Weddigenring	Kiel, Schleswig-Holstein	391
Wedding	Berlin, Brandenburg	330 33d 57
Wehrden	Völklingen, Saar	693a
Weidenau	Geisweid, Westphalia	259
Weissensee	Berlin, Brandenburg	50 51
Weisweiler	Eschweiler, Rhineland	206
E. Weitmar	Bochum, Westphalia	78
Welheim	Bottrop, Westphalia	86 87
Wellingdorf	Kiel, Schleswig-Holstein	390
Wengern	Witten, Westphalia	730
Wentzendorf	Hamburg	316
Werne	Bochum, Westphalia	77 79 80
Wesermünde	Bremerhaven, Hanover	104

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Westhausen	Dortmund, Westphalia	146
Westhofen	Schwerte, Westphalia	619
Wetter	Witten, Westphalia	731
Wik	Kiel, Schleswig-Holstein	388
Wildau	Berlin, Brandenburg	44 48
Wilhelmsburg	Hamburg	304 307 311 312 313 322 324 325 326 327
Wilmersdorf	Berlin, Brandenburg	37 52 56
Wittenau	Berlin, Brandenburg	33d 42 45 47
Wittkulle	Solingen, Rhineland	654
Witznau	Waldshut, Baden	698
Wohlgelgen	Mannheim, Baden	469
Wolfartsweier	Karlsruhe, Baden	379
Wolfen	Bitterfeld, Province Saxony	69 70 73 74
Wolfswinkel	Eberswalde, Brandenburg	194
" Wulfel	Hanover	339 342
Wurgendorf	Siegen, Westphalia	624
" Wustergiersdorf	Langenbielau, Silesia	423
" Wutoschingen	Waldshut, Baden	699

<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Zaborze	Hindenburg, Silesia	357
Zehlendorf	Berlin, Brandenburg	57
Zollstock	Cologne, Rhineland	402
Zschachwitz	Dresden, Saxony	159
Zschornowitz	Bitterfeld, Province Saxony	69 74
Zuffenhausen	Stuttgart, Wurttemberg	660 664
Züllichow	Stettin, Pomerania	650 652
Zweckel	Gelsenkirchen, Westphalia	262
Zwätzen	Gera, Thuringia	270

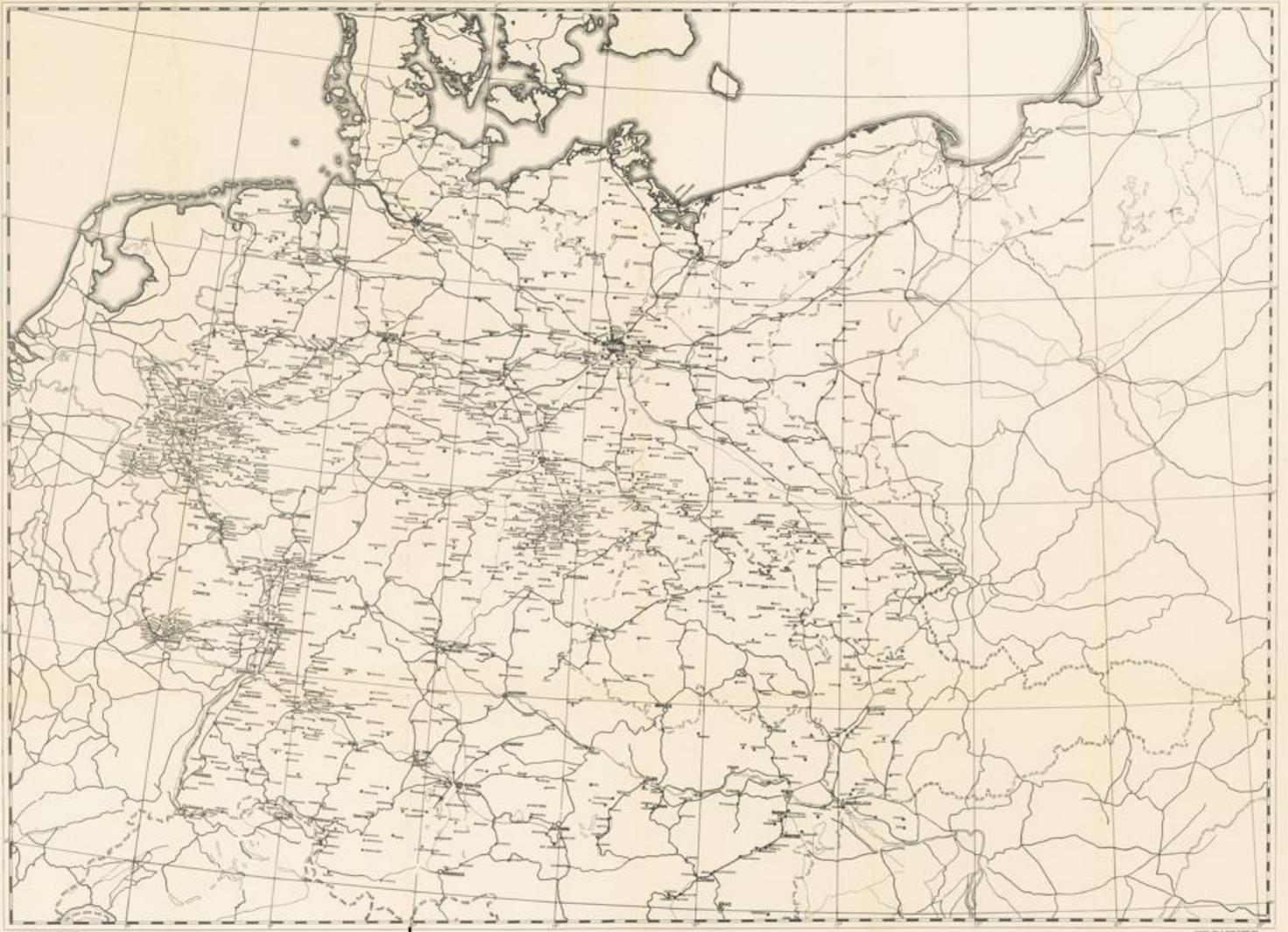
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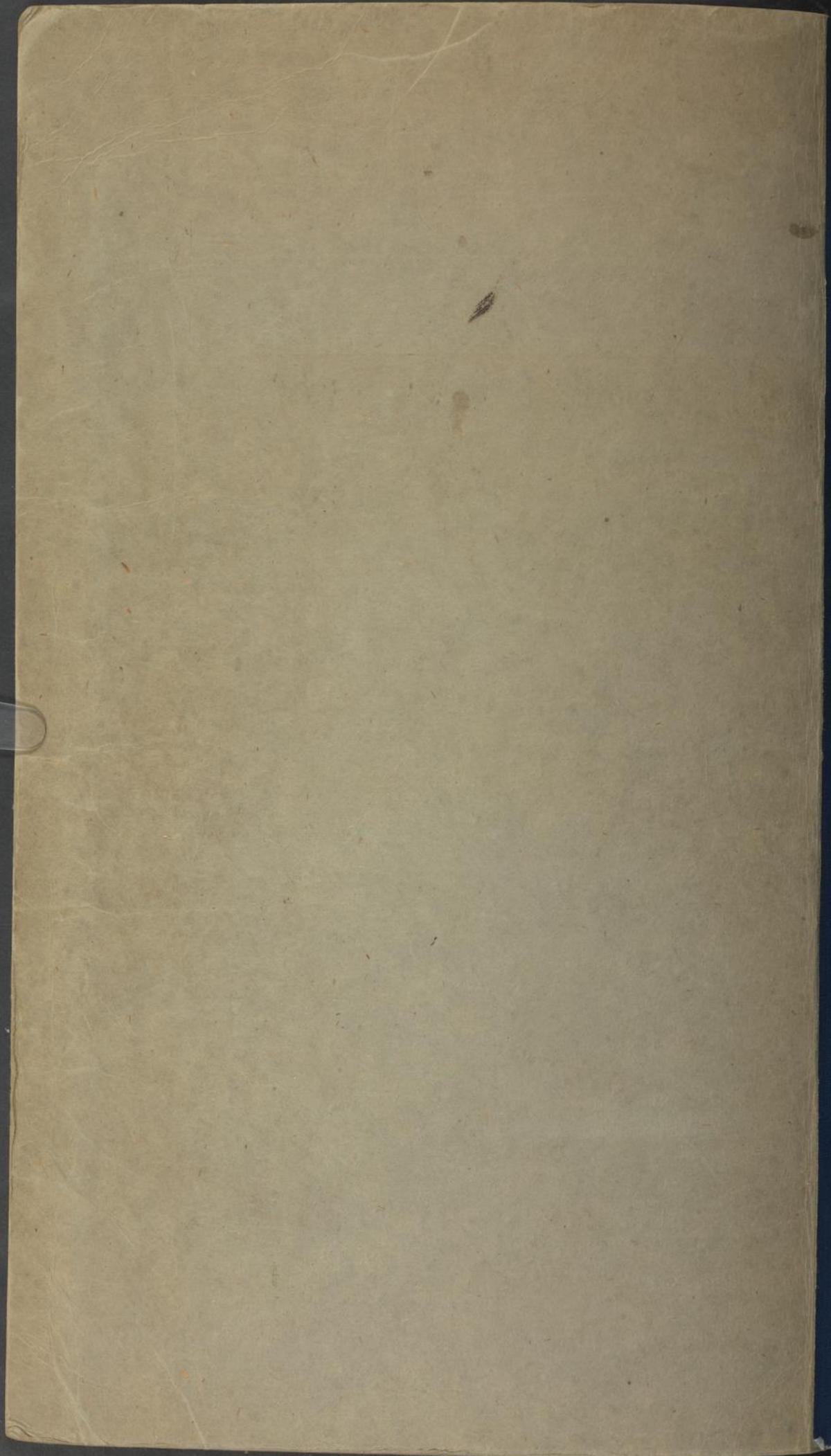
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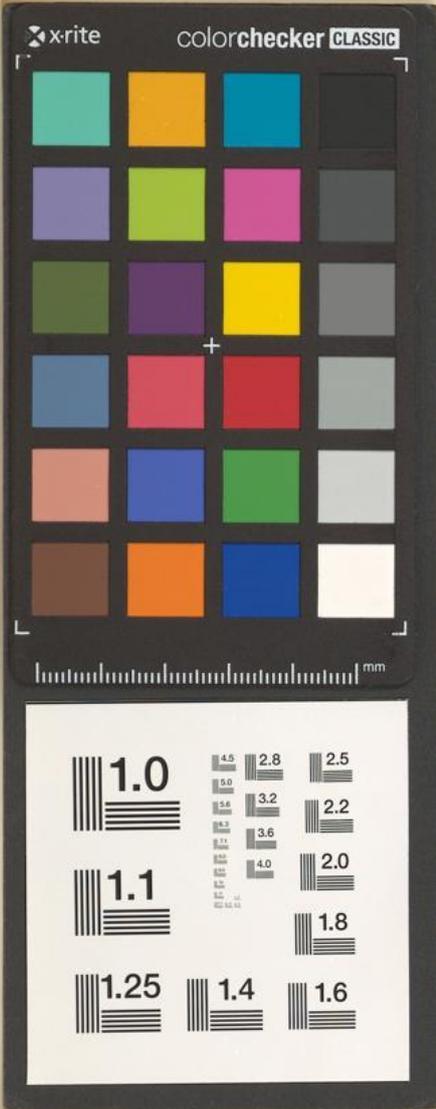
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11
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16
17
18
19
20



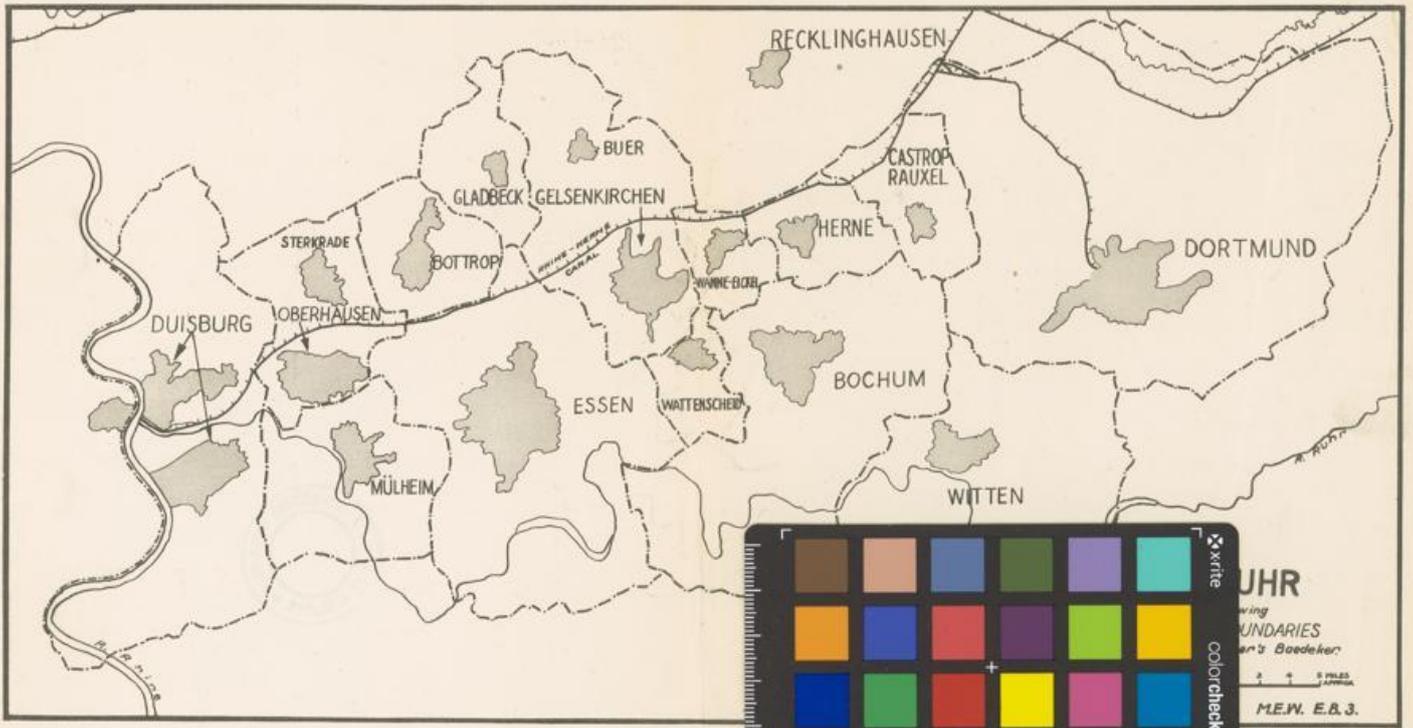
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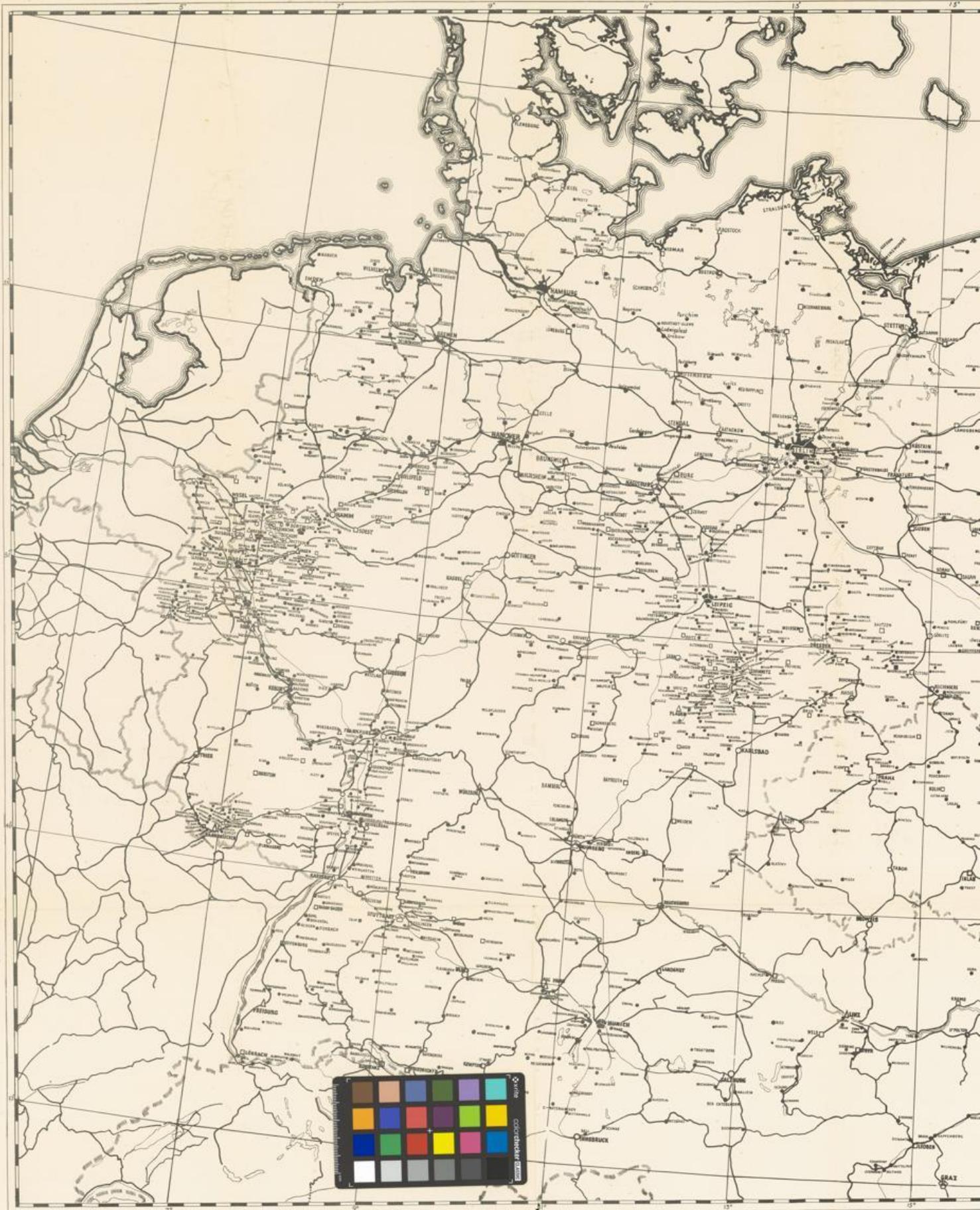
<u>Locality</u>	<u>Town & Province</u>	<u>Page</u>
Westhausen	Dortmund, Westphalia	146
Westhofen	Schwerte, Westphalia	619
Wetter	Witten, Westphalia	731
Wik	Kiel, Schleswig-Holstein	388
Wildau	Berlin, Brandenburg	44 48



Hamburg	304
	307
	311
	312
	313
	322
	324
	325
	326
	327
Berlin, Brandenburg	37
	52
	56
Berlin, Brandenburg	35d
	42
	45
	47
Solingen, Rhineland	654
Waldshut, Baden	698
Mannheim, Baden	469
Karlsruhe, Baden	379
Bitterfeld, Province Saxony	69
	70
	73
	74
Eberswalde, Brandenburg	194
Hanover	339
	342
Siegen, Westphalia	624
Langebielau, Silesia	423
Wutöschingen	699
Waldshut, Baden	699



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ENEMY BRANCH F.O. PEAK
JUNE 1944