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EMPIRE OIL COMMITTEE

Western Axis Subcommittee

PRESENT POSITION OF REFINING INDUSTRY

IN

GERMAN-HELD EUROPE

November 22, 1943

PRESENT POSITION OF THE REFINING INDUSTRY IN GERMAN-HELD EUROPE

(1) Whereas German-held Europe had, at the time of our last report, (EOC 45-2) a comfortable and fairly well distributed excess of refining capacity, it is now clear that the excess has been reduced to the danger point. The loss of certain Italian refineries, the destruction of certain Italian, German and Rumanian refineries, added to the impotence of the French and Lowlands refineries, has completely changed the outlook. For the first time it is evident that an immediate effective blow at the European refining industry would cause crude oil to be shut back in the wells.

(2) The Allied capture of the Naples and Bari refineries represents a permanent loss to the German economy of 450,000 (a)* tons per year of crude handling capacity. The approach of Allied armies and the destruction of crude supply lines by guerrillas is understood now to have immobilized the remaining Italian capacity to the further extent of 1,600,000 (b) tons per year. The damage to Rumanian and German refineries represents a loss, at least for several months, estimated at 3,925,000 (c) tons and 540,000 (d) tons respectively. The destruction of tankage and dismantling of equipment in Northern France and the Lowlands is calculated to represent a loss of 5,030,000 (e) tons. The total actual loss therefore is estimated to have been 11,545,000 (f) tons. In addition it must be noted that, excepting the small plants for local oil, the remaining capacity in France and the Lowlands, 4,085,000 (g) tons, is unavailable due to its remoteness from the centers of production and consumption. Furthermore, of the so-called "capacity" in Germany, 720,000 (h) tons represents simply lube or gasoline finishing capacity which could not be adapted to handling crude. This leaves only 9,765,000 (i) tons, of the original 26,115,000 (j) tons of European refining capacity, now available to the Germans for crude handling.

(3) If subjected to no further molestation it is believed that a large part if not all of the damaged refinery equipment in Rumania and Germany could be replaced by the Spring of 1944. Equipment has been removed from French refineries which, with attendant facilities, would be capable of handling several million barrels per year of crude oil. Some of this equipment may be destined for the Lobau refinery, now under construction, or for the rumored new refineries to be built at Komarom and Sniederevo. It is even possible that "unknown" plants have been erected with these transplanted facilities, although no intelligence whatsoever has been received to such effect. On the other hand, a large part of it may have been consumed in the construction of the new synthetic plants. In any case, this or newly fabricated equipment could be installed in the presently damaged refineries and a safe margin of excess capacity reestablished by next Spring. It is obvious that the recovery of such a margin, before further raids, would be a matter of first urgency for the Germans.

* These letters refer to items in the set of notes attached.

(4) Ignoring the possibility of "unknown" plants it is deemed most probable that for the treatment of the 8,810,000 (k) tons of crude petroleum currently in production, there is refinery capacity in German-held Europe, accessible and operable, totalling 9,765,000 (i) tons per year. This leaves a margin of only 955,000 (l) tons excess capacity which is hardly adequate since it is only 11% of the crude produced. This available excess capacity and the deficit capacity, in thousands of metric tons yearly, is distributed approximately as follows:

	Excess Crude Cap'y		Deficit Crude Cap'y
Germany	252	Austria	468
Czechoslovakia	668	Hungary	400
Italy	40	Total	868
Yugoslavia	130		
Rumania	288		
Poland	400		
France, Estonia	45		
Total Excess	1,823		
Total Deficit	868		
Net Excess	955		

(5) From the above considerations it appears that a successful new attack on the European refining industry would have an excellent chance of valorizing the Ploesti raid. It also appears that the sooner such an attack is made the greater would be the return.

NOTES ON REPORT OF REFINING INDUSTRY IN GERMAN-HELD EUROPE--Nov. 1943

(Figures, in thousands of metric tons per year, are those of Report EOC 45-2 except as regards present crude production, item K).

(a) Italian loss

Naples	200
Bari	250
	450

(b) Italian Immobilization

Aquila-Trieste	300
SIAP-Trieste	150
ROMSA-Fiume	150
AGIP-Venice	350
NAFTA-Spezia	400
ANIC-Leghorn	250
	1,600

(c) Rumanian loss

Astra (50%)	900
Colombia (100%)	535
Concordia (15%)	225
Credit Minier (100%)	535
Orion (30%)	230
Steaua (100%)	1,500
	3,925

(d) German loss (assumed)

Rhenania-Harburg (40%)	220
Ebano-Harburg (40%)	160
Eurotank-Pet'haven (40%)	160
	540

(e) French loss

Dunkerque	450
Courchelettes	300
Gonfreville	1,600
Port Jerome	1,250
Gravenchon	300
Petit Couronne	750
Consomm.-Donges	130
Pechel.-Donges	250
	5,030

(f) Total actual loss

Italian loss	450
Italian shutdown	1,600
Rumania damage	3,925
German damage	540
French demolition	5,030
	11,545

(g) French Immobilization

Pauillac	500
Bec d'Ambes	350
Frontignan	300
Martigues	650
Berre	550
L'Avera	400
Belg. Netherlands	
Denmark, Norway	1,335
	4,085

(h) German non-crude cap'y

Vacuum-Schulau	15
Albrecht-Crasbrook	30

(h) Cont'd

Schliemann-Crasbrook	65
Rhenania Ossag-Crasbrook	130
DPAC-Neuhof	65
Schindler-Neuhof	40
Duetsche Gasoline-Dollbergen	40
Vacuum-Bremen	80
Schindler-Peine	20
Niedersachen-Dollbergen	10
Deutsche Gasoline-Emmerich	60
Ersag-Wintershall-Salzbergen	30
Schmitz-Dortmund	20
Rhenania-Ossag-Monheim	115
	720

(i) Residual Capacity

Total	26,115
Lost (item f)	11,545
	14,570
Immobilized (item g)	4,085
	10,485
Immobilized (item h)	720
	9,765

(j) Original Cap'y Figures

Germany	2,505
Czechoslovakia	700
Austria	800
Hungary	400
Italy	2,100
Yugoslavia	180
Rumania	9,280
Poland	800
Estonia	100
France	7,915
Lowlands, etc.	1,335
	26,115

(k) Crude Production Rate, Dec. 1, 1943

Germany	993
Czechoslovakia	32
Austria	1,268
Hungary	800
Italy	10
Yugoslavia	50
Rumania	5,067
Poland	400
Estonia	95
France	95
	8,810

(l) Excess Refining Cap'y

Available (item i)	9,765
Crude	8,810
Excess	955

1. Mineralol & Asphaltwerke — Ostermoor, Germany

Common Name of the Refinery: MWAG

Name of Company: Mineralol und Asphaltwerke A.G.

Address of Company: -

Affiliations of Company: -

Location of Refinery: Ostermoor; on right bank of the river, 40 miles downstream from Hamburg near Neumuehlen. The refinery is on the Kaiser Wilhelm canal near the point where this joins the river.

Capacity in metric tons per year: 180,000, based on 140,000(a), 135,000(b), 150,000(c), 140,000(z), 140,000(.i) 2500 B/D (ii)

Distillation Facilities: Pipe still and shell stills (-).

Cracking Facilities: None

Lube Facilities: None

Tankage Capacity in metric tons: 64,000(aa) none (zz)

Damage and Demolition: Slight damage (cc). No major damage.

Remarks: Asphalt facilities. Refinery probably inactive, Oct. '45.

2. Europaische Tanklager — Hamburg, Germany

Common Name of the Refinery: Eurotank

Name of Company: Europaische Tanklager und Transport Aktiengesellschaft

Address of Company: Esplanade 6, Hamburg 36, Germany

Affiliations of Company: Nitag Company, Berlin;
Foreign Oil Co. Inc. 1st N. atl bank bldg. Boston, Mass.

Location of Refinery: On S. bank of Elbe river in the Finkenwarder section of the Hamburg region and just a few hundred yards SE of of the Neuer Petroleumhafen basin which is about 6 miles downstream from the main Hamburg City bridges.

Capacity in metric tons per year: 400,000 is accepted although Winkler Koch who designed and built the refinery states its actual capacity as 9-11,000 B/D. Other figures are: 380,000(z), 500,000(b), 400,000(q), 460,000(o), 300,000(w), 385,000 (z), 8000 B/D (ii)

Distillation Facilities: Combination W-K topping and cracking unit with topping by heat exchange and gas oil cracking and naphtha reforming in two coils. Pitch from a vacuum tower following the cracking coil tower. Debutanization and stabilization, with sale of propane and butane.

Cracking Facilities: As shown above.

Lube Facilities: None

Tankage Capacity in metric tons: Unknown

Damage and Demolition: Bombing damage to tankage nearby(cc). Oct. 1943 shows no damage to refinery.

Remarks: Located close to considerable storage tank farm. 1941 photos show change in shape of harbors. This refinery built in 1933-5.

8. Rhenania Ossag _____ Harburg, Germany _____

Common Name of the Refinery: Rhenania-Harburg

Name of Company: Rhenania-Ossag Mineralölwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Shell Transport & Trading Co., Ltd. (and NV Koninklijke Nederlandsche Mij). St. Helen's Court London E.C.3.

Capacity, in metric tons per year: 550,000, other figures 390,000(a), 300,000 (b), 460,000(c), 550,000(w), 550,000(z), 550,000(aa), 550,000 (ad), 100,000 (additio to 460,000) being added in 1939(c), 5000 B/D (ii)

Distillation Facilities: Atmospheric and vacuum pipe stills for crude and topped crude. Vacuum pipe still for asphalt. Lube stills.

Cracking Facilities: None, although wax cracking for synthetic lube production was projected in 1939.

Lube Facilities: Acid treating of lubes and redistillation. Also deparaf plant, duotreating plant and synthetic lube plant projected in 1939. Edeleanu plant now reported installed - 40,000 T/yr capacity (z)

Tanker Capacity in metric tons: 390,000 assumed from (a), 115,000 m³ given by (c), 115,000(ff), 373,000(z).

Bombed and Demolition: Tanks bombed (cc). No damage visible Oct. 1945

Remarks: This plant works in conjunction with the Rhenania Grasbrook plant which only refines for military army.

4. Ebano Asphaltwerke — Hamburg, Germany

Common Name of the Refinery: Ebano

Name of Company: Ebano Asphaltwerke A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Standard Oil Co. (N.J)

Location of Refinery: Alongside the Rhenania refinery. On the S bank of the Süder Elbe, 1½ miles W of the Harburg bridges. Harburg centers about 5 miles SW of the Hamburg bridges.

Capacity in metric tons per year: 400,000. Figures reported: 400,000(aa), 420,000(b), 400,000(z), 8000 B/D (ii) 500 (gg).

Distillation Facilities: Two 2-stage crude pipe stills, three asphalt oxidizing stills.

Cracking Facilities: None (cracking unit under consideration in 1939)

Lube Facilities: None

Tankage Capacity in metric tons: 100,000 according to (c).

Damage and Demolition: Damage Aug. '43, to pipe still and pumphouse.

Remarks: Products include unfinished naphtha, gas oil and lube stocks as well as fuel oil and finished asphalt.

5 Rhenania Ossag — Hamburg, Germany

Common Name of the Refinery: Rhenania-Grasbrook

Name of Company: Rhenania-Ossag Mineralölwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Shell Trading & Transport Co.
(and Koninklijke Nederlandsche Mij).
St. Helen's Court, E.C.3.

Location of Refinery: On small canal from the S. bank of the Norder Elbe; in Kleiner Grasbrook, just 2 miles W. of the Hamburg Bridges.

Capacity in metric tons per year: 130.000 generally accepted. Figures reported: 100,000(a), 150,000(b), 130,000(c), 100,000(w), 130,000(z), 130,000(dd), 2000 B/D (ii)

Distillation Facilities: None except in solvent extraction unit.

Cracking Facilities: None

Lube Facilities: Edeleanu plant and acid and clay treating facilities. Grease plant. Solvent dewaxing.

Tankage capacity in metric tons: 121,000 according to (aa), 46,000 M³ (ff), 121,000(z)

Damage and Demolition: Slight damage(cc), More damage Aug. '43 but in use Oct. '43.

Remarks: Operates in connection with Rhenania-Harburg. For lube manufacture.

6. Albrecht — Hamburg, Germany

Common Name of the Refinery: Albrecht-Hamburg

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: Alongside the Schliemann refinery and just S^{W} of the Rhenania in Kleiner Grasbrook, 3 miles ^{W} of the Hamburg bridges. On a small canal from the S. bank of the Norder Elbe.

Capacity in metric tons per year: 30,000 based on 30,000(a), 35,000(b), 30,000(q), 35,000(w).

Distillation Facilities: None

Cracking Facilities: None

Lube Facilities: Acid and clay

Tankage Capacity in metric tons: 40,000(w)

Damage and Demolition: Damaged and not fully repaired by Oct, '43.

Remarks: A lube plant

7 Ernest Schliemann — Hamburg, Germany

Common Name of the Refinery: Schliemann

Name of Company: Ernest Schliemann Oelwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company:-

Location of Refinery: Alongside the Albrecht refinery and just SW of the Rhenania in Kleiner Grasbrook, 2 miles W of the Hamburg bridges, On a small canal from the S. bank of the Norder Elbe.

Capacity in metric tons per year: 65,000 based on 50,000(a), 75,000(b), 65,000(c), 60,000(w).

Distillation Facilities: No distilling equipment

Cracking Facilities: None

Lube Facilities: Acid and clay for production of white oils as well as ordinary lubes.

Tankage Capacity in metric tons: 40,000(w)

Damage and Demolition: Slightly damaged Oct. '43.

Remarks: A lube plant

8. Deutsche Petroleum — Hamburg, Germany

Common Name of the Refinery: Deutsche Petroleum - Wilhelmsburg

Name of Company: Deutsche Petroleum A.G.

Address of Company: Martin Luther Strasse, Berlin Schoenberg

Affiliations of Company: Anglo-Iranian Oil Co.
London

Location of Refinery: Wilhelmsburg, which is just S. of Hamburg across the Hamburg bridges. The refinery is ½ mile due W of the Wilhelmsburg RR station and just ¼ mile W of the highway from Hamburg to Harburg. On the N of the Reiherstieg canal.

Capacity in metric tons per year: 65,000 based on 70,000(a), 60,000(b), 65,000(c), 75,000(w), 70,000(z).

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 95,000(a).

Damage and Demolition: Damage to tankage by bombing (ac). Further damage recently is possible.

Remarks:

9. Julius Schindler — Hamburg, Germany

Common Name of the Refinery: Schindler-Hamburg

Name of Company: Oelwerke Julius Schindler

Address of Company: Hohe Bleichen 28, Hamburg 36, Germany

Affiliations of Company:

Location of Refinery: In Neuhof which is to the extreme W of Wilhelmsburg, SW of the Hamburg bridges and NW of the Harburg bridges. The refinery is on the NE bank of the Rethe canal, which takes off SE from the Kohlbrand.

Capacity in metric tons per year: 40,000 based on 80,000(a), 35,000(b), 40,000(q), 50,000(w).

Distillation Facilities: Shell stills, atmospheric and vacuum

Cracking Facilities: None

Lube Facilities: Acid and Clay

Tankage Capacity in metric tons: 40,000(w)

Damage and Demolition: No damage apparent Oct. '45.

Remarks: A lube plant

10. Rhenania Ossag. Hamburg, Germany

Common Name of the Refinery: Rhenania-Wilhelmsburg

Name of Company: Rhenania Ossag Mineralölwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Shell

Location of Refinery: In Wilhelmsburg, half way between the Rhenania Grasbrook and Rhenania Harburg refineries and alongside, just W of the Schliemann refinery. On the N bank of the Reiherstieg canal where it blends halfway between the Norder and Süder Elbe River branches.

Capacity in metric tons per year: 70,000 (fr)

Distillation Facilities: Shell stills
Gasoline specialty plant
New pipe still built between Sept. '41 and July '42.

Cracking Facilities: None

Lube Facilities: None

Tankage Capacity in metric tons: 19,000 M^3(fr), 96,000(z)

Damage and Demolition: Slight damage.

Remarks: This is simply a special gasoline plant.

11 Deutsche Vacuum ... Hamburg, Germany

Common Name of the Refinery: Schulau

Name of the Company: Deutsche Vacuum Oel A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Socony-Vacuum Oil Co.
New York, New York

Location of Refinery: On N. bank of Elbe river just E. of the lighthouse which is SE of Schulau which in turn is just S of Stadel. The refinery is 19 km downstream from the Hamburg RR bridge.

Capacity in metric tons per year: 18,000

Distillation Facilities: Six 800 bbl. shell stills for lube rerunning

Cracking Facilities: None

Lube Facilities: Acid and soda, wax pressing, lube rerunning and blending, grease compounding.

Tankage Capacity in metric tons: 197,517 (hh) 51,000(z)

Damage and Demolition: Bombed severely in March 1943 and still inactive Oct. '45.

Remarks: This plant used for finishing of lube distillates from Bremen.
Total output (50 gallon barrels): 1936 - 128,000
37 - 171,000
38 - 145,000

12. Deurag-Nerag — Misburg (Hannover) Germany

Common Name of the Refinery: Deurag-Nerag

Name of Company: Deutsche Erdol Raffinerie A.G. and Gewerkschaft Neue Erdol Raffinerie A.G.

Address of Company: Misburg (Hannover), Germany.

Affiliations of Company: Elwerath

Location of Refinery: At junction of Wester-Elbe and Zweig canals at Misburg which is 4 miles E. of Hannover.

Capacity in metric tons per year: 300,000 b ased on 290,000(a), 250,000(b) 300,000(d), 420,000(z), 450,000(occ)

Distillation Facilities: Two 2-stage pipe stills for crude. Rerun pipe still

Cracking Facilities: Dubbs cracker

Lube Facilities: Furfural solvent extraction, benzol-acetone dewaxing. Solvent ext. capacity 40,000 T/yr (z).

Tankage Capacity in metric tons: 235,000(a) and (z)

Damage and Demolition: Severely bombed in 1941 and reported out of commission for six months. October 1943 reports show activity after slight damage in September.

Remarks: Polymerization plant probably completed in 1942. The 2500 B/D refinery, installed by McKee just before war, probably doubled. This refinery in two parts: Deurag, the old part, and Nerag, containing the new lube facilities.

13 Julius Schindler — Peine (Hannover) Germany

Common Name of the Refinery: Schindler-Peine

Name of Company: Oelwerke Julius Schindler, G.m.b.h.

Address of Company: Hohe Bleicher 28, Hamburg 36, Germany

Affiliations of Company: -

Location of Refinery: Peine, which is 20 miles E. by S. of Hannover.

Capacity in metric tons per year: 20,000 based on 30,000 (a), 20,000 (b), 18,000 (q), 15,000 (w)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: None except axle oil

Tankage Capacity in metric tons: 5,000 (w)

Damage and Demolition: No report

Remarks: Small gasoline and tractor fuel business. Mainly axle oil.
Slight activity October '43.

14 Deutsche Gasolin — Dollbergen (Hannover), Germany

Common Name of the Refinery: Deutsche Gasolin-Dollbergen

Name of Company: Deutsche Gasloin A.G.

Address of Company: Berlin

Affiliations of Company: Shell(?) SOCONY(?) I.G. Farben(?).

Location of Refinery: Dollbergen, which is 20 miles E. of Hannover.

Capacity in metric tons per year: 40,000

Distillation Facilities: Shell stills, new pipe still

Cracking Facilities: None

Lube Facilities: Axle Oil only

Tankage Capacity in metric tons:

Damage and Demolition: Slight bombing damage reported in 1943. Bombed recently.

Remarks: Small business in gasoline, tractor fuel and axle oil. Reported doubled in size with new pipe-still. Construction still active December '43.

Common Name of the Refinery: Niedersachsen (Or Norddeutsche)

Name of Company: Norddeutsche Mineralol A.G.

Address of Company: Dollbergen (Hannover), Germany

Affiliations of Company: -

Location of Refinery: Dollbergen, which is 20 miles E. of Hannover.

Capacity in metric tons per year: 10,000 based on 10,000(a), 10,000(b)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Present Capacity in metric tons: ?

Dismantle and Demolition: -

Remarks: -

16 Vacuum Oil Co. Oslebshausen, (Bremen); Germany

Common Name of the Refinery: Vacuum Oil

Name of Company: Deutsche Vacuum Oil A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Socony Vacuum Oil Co.
26 Broadway, New York, N.Y.

Location of Refinery: Oslebshausen, which is S. of Bremen.

Capacity in metric tons per year: 80,000 based on 100,000(a), 90,000(b), 180,000(z), 180,000(ac).

Distillation Facilities: Crude pipe still and shell stills plus a rerun pipe still.

Cracking Facilities: None

Lube Facilities: New equipment, moved to Kolin, Czechoslovakia

Tankage Capacity in metric tons: 150,000(z)

Damage and Demolition: Slight damage to tanks (cc)..
Refinery shows no damage Oct. '45.

Remarks: Primarily lube plant

17 Deutsche Gasolin — Emmerich, Germany

Common Name of the Refinery: Deutsche Gasolin - Emmerich

Name of Company: Deutsche Gasolin A.G.

Address of Company: Berlin

Affiliations of Company: Shell(?) SOCONY(?) I.G. Farben(?)

Location of Refinery: Emmerich, which is 40 miles NW of Duisberg, on the Rhine.

Capacity in metric tons per year: 60,000 based on 70,000(a), 60,000(b), 70,000(g), 50,000(z), 50,000(aa)

Distillation Facilities: Pipe still

Cracking Facilities: Small unit

Lube Facilities:

Tankage Capacity in metric tons: ?

Damage and Demolition: Badly damaged in June 1940 and in 1942 (cc). Repaired and OK in July '43.

Remarks:

18 Ersag-Wintershall — Salzbergen, Germany

Common Name of the Refinery: Ersag-Salzbergen

Name of Company: Erdol-Raffinerie Salzbergen

Address of Company: Kassel

Affiliations of Company: SOCONY (?) SHELL (?) Wintershall

Location of Refinery: Salzbergen which is about 2 Km NW of Rheine, close to the Netherlands border.

Capacity in metric tons per year: 50,000 based on 50,000(a), 30,000(b), 20,000(z), 100,000(m), 100,000(aa).

Distillation Facilities: Shell stills
New Pipe Still

Cracking Facilities: Small unit

Lube Facilities:

Tankage Capacity in metric tons: 36,000(aa).

Damage and Demolition: Unknown

Remarks: Underground storage tanks. Considerably extended in 1941 including new pipe still and tankage. Built early..

19 Schmitz Westfalische — Dortmund, Germany

Common Name of Refinery: Schmitz-Westfalisch

Name of Company: Westfalisch. Mineralol und Asphaltwerk., W.H. Schmitz Kommandit Gesellschaft.

Address of Company: Dortmund

Affiliations of Company: -

Location of Refinery: Dortmund.

Capacity in metric tons per year: 20,000 based on 20,000(a), 25,000(q), 20,000(z).

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: ?

Tankage Capacity in metric tons: ?

Dismantlement and Demolition: Unknown

Remarks: -

Common Name of the Refinery: Rhenania-Monheim

Name of Company: Rhenania-Ossag Mineralölwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Shell Transport & Trading Co., Ltd.
(and NV Koninklijke Nederlansche Mij).
St. Helen's Court, London, E.C.3.

Location of Refinery: Monheim, which is on the right bank of the Rhine, a few miles S. of Dusseldorf

Capacity in metric tons per year: 115,000 based on 100,000(a), 100,000(b), 130,000(c), 75,000(w), 115,000(z), 115,000(dd).

Distillation Facilities: Shell stills, some under vacuum

Cracking Facilities: None

Lube Facilities: Acid and clay, small SO_2 extraction unit (8000 T/yr)

Tankage Capacity in metric tons: 36,000(c), 48,000 M^3 (ff)

Damage and Demolition: Slight damage by bombing reported in 1943. May '43 report indicated severe damage, reducing capacity to 25%.

Remarks: This is not a crude oil refinery, although it had some asphalt business.

21 Rhenania Ossag Reisholz (Dusseldorf), Germany

Common Name of the Refinery: Rhenania-Reisholz

Name of Company: Rhenania Ossag Mineralolwerke, A.G.

Address of Company: Hamburg, Germany

Affiliations of Company: Shell Company

Location of Refinery: Reisholz, which is 4 miles SE of Dusseldorf

Capacity in metric tons per year: 67,000(ff)

Distillation Facilities: Shell stills
Gasoline specialty plant

Cracking Facilities: None

Lube Facilities: None

Bankage Capacity in metric tons: 37,000 HS(ff), 65,000 (z)

Damage and Demolition:

Remarks: This is simply a special gasoline plant.

Common Name of the Refinery: Apollo-Bratislava

Name of Company: Apollo Rafinerie Mineralnich Oleju

Address of Company: Culenova

Affiliations of Company: I.G. Farbeuindustrie (ll). Formerly French owners.

Location of Refinery: About 2 miles out of Bratislava (Pressburg) in Danube harbor.

Capacity in metric tons per year: 150,000 based on 60,000(a), 90,000(h), 150,000(i), 80,000(z), 90,000(jj), 1800 B/D (ii) and additions (y).

Distillation Facilities: Bruun Koniasfeld Pipe still recently made two stage (y). Also shell stills and McKee pipe still (y).

Cracking Facilities: Dubbs unit for 1100 B/D. 40,000 T/yr (y).

Lube Facilities: Acid, clay, filter press dewaxing. Also phenol extraction and Barisol dewaxing.(y)

Finished Capacity in metric tons: 60,000(o), 200,000(aa), 65,000(jj), 60,000(y)

Dismantling and Demolition: None

Remarks:

23 Lederer - Benzol Verband — Kralupy, Bohemia

Common Name of the Refinery: Kralupy

Name of Company: Kralupska Rafinerie Mineralnich Oleju (Lederer & Co.).

Address of Company: Prague

Affiliations of Company: Czechoslovak

Location of Refinery: Kralupy, just N. of Prague, on Elbe river on RR from Prague to Podmokly.

Capacity in metric tons per year: 60,000 based on 60,000(a), 50,000(b), 50,000(g), 33,000(z), 33,000(aa), 60,000(jj)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 25,000 (jj)

Damage and Demolition:

Remarks:

24 Vacuum Oil Company. Kolin, Bohemia

Common Name of the Refinery: Kolin

Name of Company: Vacuum Oil Co. A.S.

Address of Company: Prague

Affiliations of Company: Socony Vacuum
New York, New York

Location of Refinery: At Sedrzusice, the northern suburb of Kolin, which is 62 Km E. of Prague. About 2 Km N. of Elbe, on RR from Prague to Podnokly.

Capacity in metric tons per year: 90,000 based on 150,000(a), 90,000(b), 100,000(q), 80,000(z), 80,000(aa), 120,000(jj), 1800 B/D (ii).

Distillation Facilities: Foster-Wheeler pipe still, atmospheric and vacuum. Also shell stills.

Cracking Facilities: None

Lube Facilities: Duosol solvent extraction, Lurrus benzol-acetone dewaxing.

Tankage Capacity in metric tons: 50,000(h), 60,000(jj)

Building and Demolition: None

Remarks: Distillation facilities reported increased considerably above 90,000 T/yr since war (hh).

25 Fanto Works — Pardubice, Bohemia

Common Name of the Refinery: Fanto-Pardubice

Name of Company: Fanto Refinerie

Address of Company: Prague Letchow

Affiliations of Company: Swiss

Location of Refinery: 2 Km E of Pardubice, 130 Km E and slightly S. of Prague.

Capacity in metric tons per year: 300,000 based on 190,000(a), 300,000(b), 90,000(.), 180,000(z), 130,000(jj), 4000 B/D (ii)

Distillation Facilities: Vacuum pipe still and shell stills

Cracking Facilities: None

Lube Facilities: Acid and clay, filter presses, 30,000 T/yr(y)

Tankage Capacity in metric tons: 70,000(jj)

Tankage and Demolition:

Remarks:

26 Fanto Werke — Novy Bohumin (Oderberg), Moravia)

Common Name of the Refinery: Fanto-Bohumin

Name of Company: Fanto Werke, A.G.

Address of Company: Prague, Smichow

Affili tions of Company:

Location of Refinery: Novy Bohumin (Oderberg), important RR junction a few miles N. of Moravska Ostrava.

Capacity in metric tons per year: 60,000 based on 90,000(a), 60,000(b), 50,000(q), 65,000(z), 65,000(aa), 50,000(jj)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 50,000 (jj)

Tankage and Demolition:

Remarks:

27 Privozer Mineralol - Privoz (Moravska Ostrava), Moravia

Common Name of the Refinery: Privoz

Name of the Company: Privozer Mineralolwerke, A.G.

Address of Company: Moravska Ostrava

Affiliations of Company: Thorach of Vienna.

Location of Refinery: Privoz, a suburb of Moravska Ostrava in the NE corner of Moravia, on the RR from Bohumin to Prerov.

Capacity in metric tons per year: 50,000 based on 50,000(a), 65,000(b), 40,000(q), 55,000(z), 55,000(aa), 40,000(jj)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 20,000(jj)

Damage and Demolition:

Remarks:

28 Government Refinery — Dubowa, Slovakia

Common Name of the Refinery: Dubowa

Name of Company: ?

Address of Company: ?

Affiliations of Company: Government

Location of Refinery: Dubowa, which is NE of Vienna and SE of Moravska Ostrava. On the RR from Zvolen to Margocany, near Podbrezova.

Capacity in metric tons per year: 90,000 based on 90,000(b), 70,000(q), 60,000(z), 60,000(aa), 50,000(jj), 60,000(y)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons: 50,000(jj)

Damage and Demolition:

Remarks: This refinery built by the Government in 1936-7 and the intelligence items relating to it have been scarce. Produced 32,000 T in '42.'y).

29 Shell Floridsdorfer — Floridsdorf (Vienna), Austria

Common Name of The Refinery: Floridsdorf

Name of Company: Shell-Floridsdorfer Mineralölfabrik, A.G.

Address of Company: Vienna

Affiliations of Company: Shell Transport & Trading Co., Ltd.
(and NV Koninklijke Nederlandsche Mij).
St. Helen's Court, Londin, E.C.3.

Location of Refinery: Floridsdorf, about 5 miles N. of Vienna's center bridge.

Capacity in metric tons per year: 100,000 based on 100,000(a), 100,000(b), 100,000(c), 80,000(q), 90,000(z), 90,000(dd), 2000 B/D (ii)

Distillation Facilities: Pipe still atmospheric and vacuum

Cracking Facilities: None

Lube Facilities: Acid and clay, and vacuum still

Tankage Capacity in metric tons: 15,000, 31,000 M³(c)

Damage and Demolition:

Remarks: Intelligence items indicate a considerable increase in capacity recently.

30 Creditul Minier — Korneuburg (Vienna), Austria

Common Name of the Refinery: Korneuburg

Name of Company: Credit Minier Osterreichisch-Rumanische Act. V-G.

Address of Company: Vienna

Affiliations of Company: --

Location of Refinery: Southern outskirts of Korneuburg, on the E. bank of the Danube about 6 miles upstream from the north RR bridge at Vienna.

Capacity in metric tons per year: 50,000 based on 50,000(a), 70,000(b), 20,000(_), 30,000(w), 45,000(z), 45,000(aa), 24000 B/D (ii)

Distillation Facilities: Pipe still without tower plus 4 shell stills.

Cracking Facilities: None

Lube Facilities: Acid and clay

Tankage Capacity in metric tons: 10,000(q), 15,000(mm)

Barrels and Demolition: None

Remarks:

51 Vacuum Oil Company — Kagran (Vienna), Austria

Common Name of the Refinery: Kagran

Name of Company: Rohrin und Oel Industrie Kagran, A.G.
(Vacuum Oil Co. A.G.)

Address of Company: Vienna

Affiliations of Company: Socony-Vacuum, New York

Location of Refinery: Kagran, which is 5 miles NE from center of Vienna

Capacity in metric tons per year: 60,000 based on 30,000(a), 60,000(b), 60,000(q), 66,000(z), 66,000(aa)

Distillation Facilities: Brunn Koni-sfold atmospheric and vacuum pipe still. Also 3 shell stills.

Cracking Facilities: None

Lube Facilities: Continuous acid treating, with centrifuges, and clay contacting with 3 filter presses, 2 grease kettles

Tankage Capacity in metric tons: 20,000(b), 20,670 (bb)

Damage and Demolition: None

Remarks: Full details of the refinery ownership and equipment in PAW Foreign Division N.Y. files.

Common Name of the Refinery: Ento-Vosendorf

Name of Company: Osterreichische "Ento", A.G.

Address of Company: Vienna

Affiliations of Company: --

Location of Refinery: Vosendorf, which is 6 miles SW of the center of Vienna.

Capacity in metric tons per year: 40,000 based on 30,000(a), 40,000(q), 40,000(z).

Distillation Facilities: Pipe still

Cracking Facilities: None

Lube Facilities: None

Tankage Capacity in metric tons: 10,000(a)

Damage and Demolition: None

Remarks:

53 Petrolifera-Co.Ord. ..... Fornovo di Taro, Italy.

Common Name of the Refinery: Petrolfo

Name of Company: Societa Petrolifera Italiana

Address of Co.Head: Rome, Italy.

Affiliations of Company: Standard Oil Co. (N.J.)
Nat.Iod.Pet.Corp.

Location of Refinery: Near Fornovo di Taro, which is 12 mils S.E. of Parma.

Capacity in metric tons per year: $\frac{50,000}{1000}$ T/D (V) or 40,000(L), 8,000(G).

Distillation Facilities: Mod. stills

Cracking Facilities: None

Lub. Facilities: None

Tankage Capacity: Crude oil, ... (V)

Date, and Edition:

Remarks: Owns 4 petrol stations in Parma.
See Petrolifera Report

54 Petroli _____ Fiorenzuola, Italy

Common Name of the Refinery: Petroli

Name of Company:

Address of Company: Naples

Affiliations of Company:

Location of Refinery: Fiorenzuola

Capacity in metric tons per year: 10,000

Distillation Facilities: Small stills

Cracking Facilities: None

Lube Facilities: None

Linkage Capacity in metric tons:

Damage and Demolition:

Remarks: Operated on a small part of the local crude

Sr Raff. di Napoli — Napoli, Italy

Common Name of the Refinery: Raffineria di Napoli

Name of Company:

Address of Company: Napoli, Italy

Affiliation of Company: Standard Oil Co., N.J.

Location of Refinery: Naples

Capacity in metric tons per year: 40,000 (a), 220,000(b), 200,000(c), 220,000(d), 220,000(e), 2,000,000(x), 5000 B/D (v), 2,000 B/D (w)

Distillation Facilities: Pipe still atmospheric and vacuum stage.

Cracking Facilities: Duba cracker 220,000 T/Y thermal catalytic cracker for 2,000,000 T.

Lube Facilities: Naphtha dewaxing (batch process), Duo-sol solvent extraction.

Tankage Capacity in metric tons: 90,000(b), 180,000(x), 180,000(z) 17,000(w)

Building and Demolition:

Remarks: Building plant adjacent to the AGIP refinery, 12 miles away; will be built in 1956. Duba cracker to be used for 50,000 T/Yr until 1957, when it will be replaced by thermal cracking. Duba cracker will be demolished Jul 1957. Tankage (b) will be demolished Nov. 1961. Tankage (z) will be built in 1960 and demolished.

Common Name of the Refinery: Bari

Name of Company: Azienda Nazionali Idrocarburi - Combustibili.

Address of Company: Milan, Italy

Affiliations of Company:

Location of Refinery: [illegible] of Bari on road to Modugno

Capacity in metric tons per year: 450,000 b/d on 220,000(a), 220,000(b), 240,000(c), 135,000(z), 185,000 B(x), 1,200 L/D (v), 5000 B/D (kk)

Distillation Facilities: Foster Wheeler pipe still good for 1000 T/D. Also railroad tills.

Cracking Facilities: 2 Idrocracking, modified, good for 600 T/D

Lube Facilities: Lube plant by Idrocracking base oil finishing facilities

Tankage Capacity in metric tons: 150,000(a), 50,000-25...(x), 150,000(aa) 130,000 (xx), 215,000(xxx), 161,000 (v)

Dates of Demolition:

Remarks: Idrico unit in operation 15,000 T/yr

57. Vacuum Oil Company — Bosanski Brod, Yugoslavia

Common Name of the Refinery: Brod

Name of Company: Standard-Vacuum of Croatia, Inc.

Address of Company: Bosanski-Brod

Affiliations of Company: Socony-Vacuum Oil Co., New York, New York

Location of Refinery: Bosanski Brod which is on the R bank of the Sava River about 113 miles ESE of Zagreb.

Capacity in metric tons per year: 100,000 based on 110,000 (a), 100,000 (b) 100,000 (x), 94,000 (z), 100,000 (y).

Distillation Facilities: Atmospheric pipe still and vacuum shell stills

Cracking Facilities: None

Lube Facilities: Acid

Tankage Capacity in metric tons: 80,000 333,709 bbls. (b), 33,000-41,000 (x) 44,000 (hh) 33,000 (x)

Damage and Demolition:

Remarks:

58. Anglo-Jugoslav-Shell — Caprag (Sisak) Jugoslavia

Common Name of the Refinery: Caprag

Name of Company: Shell Co. of Yugoslavia, Ltd. (Jugoslavensko Shell DD)

Address of Company: Sisak

Affiliations of Company: Shell, London

Location of Refinery: Caprag, which is just across the bridge and 1½ miles from Sisak on the Sava River, about 35 miles SE of Zagreb.

Capacity in metric tons per year: 100,000 based on 80,000 (a), 110,000 (b), 100,000 (c), 80,000 (dd), 12,000 (z), 100,000-120,000 (x), 100,000 (ff), 120,000 (y).

Distillation Facilities: Shell stills atmospheric and vacuum

Cracking Facilities: None

Lube Facilities: Yes

Tankage Capacity in metric tons: 40,000 M³ (--), 34,900 (x)

Damage and Demolition:

Remarks: Handles Rumanian oil.

59. Ipoil — Osijek, Yugoslavia

Common Name of the Refinery: Osijek

Name of Company: Ivanovich & Co. (Astra DP)

Address of Company: Osijek

Affiliations of Company:

Location of Refinery: Osijek

Capacity in metric tons per year: 20,000 (e)

Distillation Facilities: A few small stills

Cracking Facilities: None

Lube Facilities: None

Tankage Capacity in metric tons: 2,500 (e)

Damage and Demolition:

Remarks: Built of second-hand equipment

60. Astra Romana — Ploesti, Rumania

Common Name of the Refinery: Astra Romana

Name of Company: Astra Romana, S.S.

Address of Company: Bucarest, Rumania

Affiliations of Company: Shell Co. London

Location of Refinery: S edge of Ploesti

Capacity in metric tons per year: 1,750,000 base on 1,950,000 (a), 2,500,000 (b), 2,000,000 (c) 1,650,000 (w), 1,750,000 (dd), 2,000,000 M³ (x), 1,750,000 (z) 1,800,000 2,000,000 (ff)

Distillation Facilities: Two-stage McKee pipe still good for 3500 T/D maximum also shell still battery with pre-topper good for 3000 T/D maximum

Cracking Facilities: Four Dubbs crackers and reformer - 750,000 T/yr capacity. Trumble unit to fractionate cracked distillate.

Lube Facilities: Vacuum rerun pipe still. Acid treating and filtration

Tankage Capacity in metric tons: 400,000 (g), 420,000 (c), 147,000 (x), 424,501 (ll).

Damage and Demolition: Considerable damage, now repaired (power plant, 3 pipe stills, spare parts).

Remarks: Alkylation unit. Asphalt plant. Refinery produced 567,065 T of products first 6 months of 1941 (rr). Two boiler houses: #1 has 8 boilers, #2 (for Dubbs) has 5. Three turbogenerators.

61. Concordia "Vega" ..... Ploesti, Rumania

Common Name of the Refinery: Concordia "Vega"

Name of Company: Concordia Vega SA Romana pour l'Industrie du Petrole

Address of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: E edge of Ploesti

Capacity in metric tons per year: 1,450,000 based on 1,460,000 (a), 1,370,000 (b), 1,450,000 (g), 1,070,000 (v), 1,470,000 M^3 (z), 1,300,000 (s), 1,300,000 (bb).

Distillation Facilities: Two pipe stills good for 970,000 T/yr and three batteries of shell stills good for 800,000 T/yr

Cracking Facilities: Winkler Koch cracker for 210,000-250,000 T/yr

Lube Facilities: Acid treating plant and vacuum rerun pipe still

Tankage Capacity in metric tons: 147,000 (x), 146,910 (ll)

Damage and Demolition: Considerable damage now repaired.

Remarks: Asphalt plant. Refinery produced 341,698 T of products first 6 months of 1941 (mm).

62. Romano Americana — Ploesti, Rumania

Common Name of the Refinery: Romano-Americana

Name of Company: Romano Americana SA pour l'Industrie, le Commerce et l'Exportation du Petrole

Address of Company: Bucarest Rumania

Affiliations of Company: Standard Oil Co. (NJ) New York, New York

Location of Refinery: Teleajen, which is 3 miles E of Ploesti

Capacity in metric tons per year: 1,170,000 based on 1,170,000 (a), 1,750,000 (b), 900,000 (w), 1,400,000 M^3 (x), 1,100,000 (z)

Distillation Facilities: Pipe still for 15,000 B/D and 12 Shell stills for 12,000 B/D. Also Foster Wheeler pipe still for 4,500 B/D bottoms and 6 asphalt shell stills.

Cracking Facilities: Tube and Tank cracking coil for 30,000 B/D

Lube Facilities: 6 vacuum shell stills acid agitators

Tankage Capacity in metric tons: 110,000 based on 808,730 bbls (a), 154,000 (b), 104,000 (x), 163,957 (11)

Damage and Demolition: None

Remarks: Asphalt plant. Refinery produced 333,673 T first 6 months of 1941 (mm). Two boiler houses: #1 has 10 boilers, #2 has 8 boilers. Power plant has 4 diesel electric generators (11).

63. Unirea Orion — Ploesti, Rumania

Common Name of the Refinery: Orion

Name of Company: Unirea SA Romana de Petrol

Address of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: Adjoining and nearly surrounded by Astra Romana refinery on S edge of Ploesti

Capacity in metric tons per year: 730,000 based on 730,000 (a), 550,000 (q), 535,000 (v), 720,000 M3 (x), 800,000 (z), 720,000 (aa).

Distillation Facilities: Pipe still with two furnaces

Cracking Facilities: None (r) (Winkler Koch cracker (x))

Lube Facilities: Ten vacuum shell stills

Tankage Capacity in metric tons: 90,000 57,000 (t) 56,940 (ll)

Damage and Demolition: Some damage now repaired.

Remarks: Three asphalt stills. This refinery works in connection with Speranta; has been enlarged since war. Has boiler house and power plant.

64. Unirea Speranta ____ Ploesti, Rumania

Common Name of the Refinery: Speranta

Name of Company: Unirea SA Romana de Petrol

Address of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: SE edge of Ploesti

Capacity in metric tons per year: 440,000 b and on 410,000 (c), 340,000 (q), 420,000 (w), 441,000 M^3 (x), 400,000 (z).

Distillation Facilities: McKee pipe still good for 295,000 T/yr; two batteries of shell stills good for 146,000 T/yr.

Cracking Facilities: None

Lube Facilities: None

Tankage Capacity in metric tons: 30,000 33,000 (a) 33,100 (ll)

Damage and Demolition: No appreciable damage

Remarks: Works in connection with Orion. Produced 52,852 T first 6 mon. of 1941 (mm). One main boiler house and two auxiliary boiler houses.

65. Colombia, "Aquila" Ploesti, Rumania

Common Name of the Refinery: Colombia "Aquila"

Name of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: SW edge of Ploesti

Capacity in metric tons per year: 535,000 based on 535,000 (a), 670,000 (b), 450,000 (q), 480,000 (w), 540,000 M^3 (x), 485,000 (z), 485,000 (bb).

Distillation Facilities: Winkler Koch pipe still good for 500,000 T/yr. (1500 T/D)

Cracking Facilities: Winkler Koch in combination with the pipe still. Two old Dubbs crackers were abandoned.

Lube Facilities: None

Tankage Capacity in metric tons: 65,000 65,000 (x) 64,750 (11)

Damage and Demolition: Severe damage, now repaired.

Remarks: Old skimming unit (6000 B/D) tied in with new Winkler Koch equipment which was completed in 1938 in collaboration with A.F. Craig. Refinery produced 140,254 T first 5 months of 1941 (mm). Lachmann unit for cracked naphtha. Boiler and power house.

66. Petrol Block "Standard" — Ploesti, Rumania

Common Name of the Refinery: Petrol Block "Standard"

Name of Company: "Petrol Block" SA Romana

Address of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: Adjoining Unirea Sperantza refinery on its W boundary, on SE edge of Ploesti

Capacity in metric tons per year: 485,000 based on 465,000 (a), 670,000 (b) 330,000 (q), 350,000 (w), 504,000 M^3 (x), 550,000 (z), 580,000 (bb)

Distillation Facilities: Two batteries of shell stills, also 6 steam stills.

Cracking Facilities: Dubbs cracker good for 144,000 T/yr

Lube Facilities: Battery of vacuum stills: Agitators

Tankage Capacity in metric tons: 96,000 82,000 (n) 82,058 (ll)

Damage and Demolition: No appreciable damage

Remarks: Supposed to have ordered a polymerization and hydrocodimer plant but it was never delivered (y). The refinery not operated in 1942 (y). Produced 208,298 T first 6 months of 1941 (mm). Boiler and power house.

Ploesti, Rumania

67. Xenia

Common Name of the Refinery: Xenia

Name of Company: Xenia, S.A.

Address of Company: Bucarest, Rumania

Affiliations of Company:

Location of Refinery: NW edge of Ploesti

Capacity in metric tons per year: 290,000 based on 290,000 (a), 360,000 (b) 150,000 (c), 230,000 (w), 292,000 M3 (x) (mm), 230,000 (z)

Distillation Facilities: Borman pipe still and two shell rerun stills

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons: 49,000 49,000 (x)

Damage and Demolition: No damage

Remarks: Refinery produced 44,023 T first 6 months of 1941 (mm)

68. Dacia Romana — Ploesti, Rumania

Common Name of the Refinery: Dacia

Name of Company: Dacia Romano Petroleum Syndicate

Address of Company: Ploesti

Affiliations of Company:

Location of Refinery: N part of Ploesti

Capacity in metric tons per year: 120,000, 250,000 (a), 225,000 (b)
120,000 (y), 240,000 (nm)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: No damage

Remarks: Ran 128,000 tons in 1939. Produced 29,010 T first 6 months of 1941 (nm)

69. Petrolmina-Lumina — Ploesti. Rumania

Common Name of the Refinery: Petrolmina

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: In the southern part of Ploesti

Capacity in metric tons per year: 150,000 (r) (mm)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks: Refinery produced 49,750 T first 6 months of 1941 (mm)

70. Moris — Ploesti, Rumania

Common Name of the Refinery: Moris

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: In the northern part of Ploesti

Capacity in metric tons per year: 60,000 (r) 61,000 (rm)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks: Produced nothing first 6 months of 1941 (rm)

Bucharest, Rumania

71. Prahova - Petrolul Bucaresti

Common Name of the Refinery: Prahova

Name of Company: "Prahova" SA Romana pentur Industria si Comertul Petrolului

Address of Company: Bucarest, Rumania

Affiliations of Company: AGIP

Location of Refinery: In the Grivita district of Bucarest

Capacity in metric tons per year: 200,000 based on 205,000 (a), 262,000 (b) 350,000 (q), 190,000 (w), 210,000 M^3 (x) (mm), 200,000 (z).

Distillation Facilities: McKee pipe still good for 210,000 T/yr

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons: 32,000 32,000 (x)

Damage and Demolition: No damage

Remarks: Refinery produced 70,815 T first 6 months of 1941 (mm)

72. Petrol Block - Titan ... Bucarest, Rumania

Common Name of the Refinery: Petrol Block - Titan

Name of the Company: Petrol Block

Address of Company: Bucarest

Affiliation of Company:

Location of Refinery: Bucarest

Capacity in metric tons per year: 55,000 (r) 48,000 (nm)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks:

73. Steaua Romana — Campina, Rumania

Common Name of the Refinery: Steaua Romana

Name of Company: "Steaua Romana" SA pour L'Industria du petrol

Address of Company: Bucarest, Rumania

Affiliations of Company: Rumanian, French and British

Location of Refinery: In NE outskirts of Campina which is N of Ploesti

Capacity in metric tons per year: 1,500,000 based on 1,214,000 (a), 1,620,000 (b), 1,200,000 (q), 1,400,000 (w), 1,500,000 (dd), 1,240,000 M3 (x), 1,500,000 (z)

Distillation Facilities: Two batteries of continuous Stratford shell stills, new atmospheric and vacuum McKee pipe still good for 800,000 T/yr (y), 3 rerun batteries.

Cracking Facilities: Three Dubbs crackers good for 210,000 T/yr. One Dubbs reformer good for 60,000 T/yr.

Lube Facilities: Vacuum rerun battery

Tankage Capacity in metric tons: 208,000 197,000 (x) 197,200 (11)

Damage and Demolition: Main units destroyed. Not repaired.

Remarks: Wax plant complete. Asphalt plant. Refinery produced 203,930 T first 6 months of 1941 (mm). Has gray clay towers for cracked gasoline.

74. Creditul Minier — Brazi, Rumania

Common Name of the Refinery: Brazi

Name of Company: "Creditul Minier" SAR pentru Desvoltarea Industrial Miniere

Address of Company: Bucarest

Affiliations of Company:

Location of Refinery: Brazi which is between Ploesti and Bucarest.

Capacity in metrictons per year: 535,000 based on 535,000 (a), 760,000 (b) 420,000 (q), 450,000 (w), 540,000 M3 (x) (mm), 530,000 (z)

Distillation Facilities: Brunn Konigsfeld pipe still

Cracking Facilities: Dubbs cracker good for 162,000 T/yr

Lube Facilities:

Tankage Capacity in metric tons: 61,000 61,000 (x) 73,000 (r) 72,350 (ll)

Damage and Demolition: Main units destroyed. Not repaired.

Remarks: Refinery produced 164,650 T first 6 months of 1941 (mm). Gray towers for cracked naphtha. Iso-octane plant (catalytic polymerization and hydrogenation). One boiler house with 3 boilers. Power plant with turbo generators.

75. Photogen-Vacuum

Common Name of the Refinery: Photogen

Name of Company: Photogen Rafinerie de Petrol, SA

Address of Company: Brasov, Rumania

Affiliations of Company: Socony-Vacuum Oil Co.
New York, New York

Location of Refinery: Brasov, which is north of Campina

Capacity in metric tons per year: 35,000 based on 35,000 (z), 100,000 (b), 45,000 M3 (x), 34,000 (mm)

Distillation Facilities: Vacuum pipe still for 260 B/D 4 vacuum shell stills

Cracking Facilities: None

Lube Facilities: Furfural treating unit.

Tankage Capacity in metric tons: 19,000 (b)

Damage and Demolition: No damage

Remarks: Refinery produced 5,153 T first 3 months of 1941 (mm)

76. Steaua Romana — Moinesti, Rumania

Common Name of the Refinery: Steaua Romana Moinesti

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: Moinesti

Capacity in metric tons per year: 60,000 (r) mm

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks: Refinery produced 15,680 T first 6 months of 1941 (mm)

77. Romano Belgiana "Venus" Ramnicu Sarat, Rumania

Common Name of the Refinery: Venus

Name of Company: Romano Belgiana

Address of Company:

Affiliations of Company:

Location of Refinery: Ramnicu Sarat

Capacity in metric tons per year: 40,000 (r) 50,000 (mm)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity:

Damage and Demolition: None

Remarks: Produced nothing during first 6 months of 1941 (mm)

78. Vacuum Oil Co. Czechowice (Dziedzice) Poland

Common Name of the Refinery: Dziedzice

Name of Company: Vacuum Oil Co.

Address of Company: Dziedzice

Affiliations of Company: Socony-Vacuum Oil Co. New York, New York

Location of Refinery: Czechowice, otherwise called Dziedzice, in the SW corner of Poland, between Oswiecim and Bielsko. Refinery one kilometer S of RR station alongside tracks leading to Bielsko.

Capacity in metric tons per year: 75,000 based on 100,000 (a), 75,000 (b) 90,000 (z), 90,000 (aa)

Distillation Facilities: Foster Wheeler two-stage pipe still for crude and a few shell stills

Cracking Facilities: Kellogg (Cross) cracking for 60,000 T/yr (b)

Lube Facilities: Acid and clay with dewaxing facilities for 28,000 T/yr

Tankage Capacity in metric tons: 118,000 104,000 (hh)

Damage and Demolition:

Remarks: Running Austrian crude in 1943 (y)

79. Galicja-Malopolska — Jedlicze, Poland

Common Name of the Refinery: Jedlicze

Name of Company: Galicyjskie Karpackie Naftowe, TA

Address of Company:

Affiliations of Company: Malopolska

Location of Refinery: Jedlicze which is in the south central part of Poland

Capacity in metric tons per year: 75,000 based on 80,000 (a), 50,000 (b)
75,000 (q), 42,000 (z), 42,000 (aa)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: Acid

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Running at rate of 48,000 T/yr in 1943 (y)

80. Polski-Zwiazkowe-Malopolska — Trzebinja, Poland

Common Name of the Refinery: Trzebinja

Name of Company: Polski Zwiazkowe Rafinerja Olejow Skalnych

Address of Company:

Affiliations of Company: Malopolska

Location of Refinery: Trzebinja, which is in the SW corner of Poland

Capacity in metric tons per year: 100,000 based on 100,000 (a), 70,000 (b)
100,000 (q), 90,000 (z)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: Vacuum rerunning, acid and presses. Solvent extraction equipment from France (y)

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Not supposed running in 1943 (y). Acquired dismantled French process equipment.

81. Jaslo-Gartenberg & Schreier — Nieglowice (Jaslo) Poland

Common Name of the Refinery: Jaslo

Name of Company: Rafinerja Jaslo

Address of Company:

Affiliations of Company: Gartenberg and Schreier

Location of Refinery: Nieglowice, close to Jaslo, in south central Poland

Capacity in metric tons per year: 70,000 based on 70,000 (a), 90,000 (q)
60,000 (z)

Distillation Facilities: Pipe still

Cracking Facilities: None

Lube Facilities: Vacuum rerunning, Acid and presses

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Running at rate of 44,000 T/yr in 1943 (y). Fractionating towers were unsatisfactory. Equipment from French refineries reported installed.

82. Polmin — Drohobycz, Poland

Common Name of the Refinery: Polmin

Name of Company: Polmin State Oil Works

Address of Company:

Affiliations of Company:

Location of Refinery: Drogobycz, near S boundary of Poland

Capacity in metric tons per year: 160,000 based on 160,000 (a), 120,000 (b)
160,000 (c), 120,000 (z)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: Foster Wheeler Vacuum rerun pipe still, acid and presses

Tankage Capacity in metric tons:

Damage and Demolition: Badly damaged by bombing in 1941 but repaired.

Remarks: Running at rate of 92,000 T/yr in 1943 (z). Foster Wheeler unit rebuilt in 1943 by Zieleniewski

c83 Galicja — Drohobycz, Poland

Common Name of the Refinery: Galicja-Drohobycz

Name of Company: Rafinerja Galicja

Address of Company:

Affiliations of Company:

Location of Refinery: Drohobycz near boundary of Poland

Capacity in metric tons per year: 140,000 based on 100,000(a), 100,000(b), 140,000(c), 60,000(z)

Distillation Facilities: Foster Wheeler pipe still

Cracking Facilities: Unit for 60,000 T/yr (a), 60,000(b), 60,000(c)

Lube Facilities: Vacuum running, acid-clay process

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Running at rate of 84,000 T/yr in 1943 (y).

Common Name of the Refinery: Nafta-Drohobycz

Name of Company: "Nafta" Spolka Akcyjna

Address of Company:

Affiliations of Company: K Ionolska

Location of Refinery: Drohobycz, near S boundary of Poland

Capacity in metric tons per year: 60,000 based on 60,000 (a), 60,000 (b), 60,000 (c), 30,000 (z)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities: Acid treating and [illegible]

Tankage Capacity in metric tons: [illegible]

Damage and Demolition:

Remarks: Not running in 1945 (?)

85 Calicja-Kalcrolska — Klinik-i ariampolski, Poland

Common Name of the Refinery: Klinik-Mariampolski

Name of Company: Rafinerie Klinik- ali ijpolski

Address of Company:

Affiliations of Company: Kalcpolska

Location of Refinery: This town is near Gorlice

Capacity in metric tons per year: 80,000 based on 30,000(a), 45,000(b), 60,000(q), 60,000(z).

Distillation Facilities: Shell stills

Cracking Facilities: One unit for 30,000 T/yr (a), 30(b), 1(q).

Lube Facilities: Vacuum redistillation, acid and presses

Tankage Capacity in Barrels:

Pumps and Demolition:

Remarks: Running at rate of 60,000 T/yr in 1943.

&C Przemyslu Nafta-Gazy Ziemne Zniesienie (Lwow) Poland

Common Name of the Refinery: Gazy Ziemne

Name of Company: Rafinerja Gazow Ziemnych

Address of Company:

Affiliations of Company:

Location of Refinery: Zniesienie, near Lwow

Capacity in metric tons per year: 40,000 based on 40,000(a), 42,000(b), 60,000(q), 30,000(z).

Distillation Facilities: Foster Wheeler pipe still with atmospheric and vacuum stages.

Cracking Facilities: None

Lube Facilities: Acid treating and pressing.

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Running at reduced

87. Limanowa

Common Name of the Refinery: Limanowa

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: Limanowa

Capacity in metric tons per year: 100,000 (r)

Distillation Facilities:

Cracking Facilities

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks:

88. Fanto Malopolska — Ustrzyki Kolne, Poland

Common Name of the Refinery: Fanto-Ustrzyki Dolne

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: Ustrzyki Dolne

Capacity in metric tons per year: 50,000 (r)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks:

Krosno, Poland

89. Stawiarski

Common Name of Refinery: Stawiarski

Name of Company:

Address of Company:

Affiliations of Company:

Location of Refinery: Krosno

Capacity in metric tons per year: 20,000 (r)

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition: None

Remarks:

90. Esinene Eesti Polewkivi Toostus — Kohtla, Estonia

Common Name of the Refinery: Polewkivi Toostus (Werke III)

Name of Company: National Oil Shale Industry A/S EE Polewkivi Toostus

Address of Company: Kohtla-Jarve

Affiliations of Company:

Location of Refinery: Kohtla, in NE corner of Estonia

Capacity in metric tons per year: 40,000 based on 12,000 (a), 12,000 (b)
40,000 (y), 50,000 (y)

Distillation Facilities:

Cracking Facilities: Unit for 5,000 T/yr (b)

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Producing at rate of 42,000 in 1943 (y)

91 New Consolidated Goldfields Kohtla, Estonia

Common Name of the Refinery: New Consolidated Goldfields (Work V)

Name of Company: New Consolidated Goldfields, Ltd.

Address of Company: Kohtla

Affiliations of Company:

Location of Refinery: Kohtla, in NE corner of Estonia

Capacity in metric tons per year: $\frac{12,000 \text{ based on } 8,000(a),\ 12,000(b)}{10,000\text{-}12,000(y)}$

Distillation Facilities:

Cracking Facilities: Unit for 8,000 t/yr (b)

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks:

Common Name of the Refinery: Kivioli (Work I)

Name of Company: Estonian Shale Oil Co. A/S Kivioli

Address of Company: Kivioli

Affiliations of Company:

Location of Refinery: Kivioli, in extreme NE corner of Estonia

Capacity in metric tons per year: 30,000 based on 24,000(a), 36,000(b) 30,000(y).

Distillation Facilities:

Cracking Facilities: Unit for 17,000 T/yr (h)

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Producing at rate of 38,700 in 1943 (y) Letters and maps in files.

93. Eestimaa Olikonsortium ..... Sillamae, Estonia

Common Name of the Refinery: Olikonsortium (Werke IV)

Name of Company: Eestimaa, Olikonsortium

Address of Company: Sillamae

Affiliations of Company:

Location of Refinery: Sillamae near Vaivari in NE part of Estonia, W of Kohtla

Capacity in metric tons per year: 13,000 subject to increases

Distillation Facilities:

Cracking Facilities:

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks: Started producing in 1943

94. R. P. du Nord - Petrofina — Dunkerque, France

Common Name of the Refinery: Raffinerie du Nord "Petrofina"

Name of Company: Raffinerie de Petrole du Nord

Address of Company: 20, rue Troyon, Paris, or Caisse 12, St. Pol sur mer, Nord

Affiliations of Company: Compagnie Financiere Belge des Petroles, through Petrofina Francaise, SA

Location of Refinery: Just S of RR yards which lie along main wharves and harbors of Dunkirk. Refinery is actually in commune of St. Pol-sur-mer. Refinery storage tanks located separately in a group near the Bassin Petrolier, 1 Km. WNW of refinery proper.

Capacity in metric tons per year: 450,000 is accepted. The total run in 1936 was only 396,000. Other figures are: 450,000 (a), 500,000 (b), 350,000 (q), 410,000 (z)

Distillation Facilities: Topping unit rated at 1100 T/D crude and a vacuum unit rated at 400 T/D asphalt. Also F.W. naptha rerun still for 200 T/D

Cracking Facilities: Two Wolf-Carburol crackers for gas oil (50 T/D each) and a Winkler Koch cracker for 240 T/D residuum.

Lube Facilities: A lummus designed benzol-acetone dewaxer. Also acid treating plant for lubes.

Tankage Capacity in metric tons: 150,000 accepted since Rev. Petrolif. showed 176,700 cubic meters plus working tankage. Other figures 140,000 (aa) and 110,000 (y)

Damage and Demolition: Reported completely destroyed. Confirmed by photos.

Remarks: It is assumed that this plant has passed into history and that any future refinery rising from its ashes would bear it no resemblance. Reconnaissance in July 1943 shows it to have been partially dismantled after the severe bombing damage of 1941. It was burned by the French June 2-3 1940. 3 Bronkon boilers (510 M^2 each). 2 electric generators 4,200 kw each.

Common Name of the Refinery: Courchelettes

Name of Company: Societe Generale des Huiles de Petrole

Address of Company: Anglo-Persian Oil Co., Ltd.

Location of Refinery: Courchelettes, near Douai. The refinery is on the canal at Courchelettes.

Capacity in metric tons per year: 300,000 accepted since Kellogg supplied the equipment, rated at 6000 B/D of crude. Other figures are: 320,000 (a), 250,000 (b), 240,000 (q), 300,000 (z)

Distillation Facilities: Eleven shell stills, seven under vacuum, plus a Kellogg atmospheric pipe still. A naphtha steam still, etc. Also designed a vacuum pipe still for 1500 B/D reduced crude.

Cracking Facilities: A Kellogg cracking coil, rated 2000 B/D

Lube Facilities: Edeleanu (SO_2benzol) lube treating plant (55 T/D) Sharples and filter press dewaxing units; clay treating plant. Also designed a clay treater for 1000 B/D lube distillate.

Tankage Capacity in metric tons: 75,000 accepted although Rev. Petrol. shows 100,000. Another figure is 55,000 (aa).

Damage and Demolition: Tankage destroyed, equipment reported partially dismantled.

Remarks: #1 distillation unit (500 T/D capacity) almost entirely destroyed.
#2 " " which started operations in 1938, slightly damaged. Main pump house slightly damaged. Supposed to be producing (1944) 160 T/month of toluene.

96. Cie. Francaise de Raff. . . . . Gonfreville (Le Havre)France

Common Name of the Refinery: Gonfreville

Name of Company: Compagnie Francaise de Raffinage

Address of Company: 9, Square de messine, Paris (VIII)

Affiliations of Company:

Location of Refinery: Gonfreville l'Orcher on the Tancarville canal about 5 miles E of Le Havre

Capacity in metric tons per year: 1,600,000 reported based on 30,000 B/D installed crude capacity. Other figures 1,600,000 (a), 1,800,000 (b), 1,200,000 (q), 1,600,000 (z)

Distillation Facilities: 20,000 B/D F.W. topper and stabilizer; 15,000 B/D Kellogg pipe still; 2-7500 B/D McKee pipe stills; naphtha rerun, etc.

Cracking Facilities: Three Kellogg cracking or reforming units with stabilizers.

Lube Facilities: Edeleanu plant built for kerosine but available for lubes with changes. Wax plant to handle 250 T/D of paraffine distillate.

Tankage Capacity in metric tons: 400,000 according to (aa)

Damage and Demolition: Tanks destroyed in large part. Some crude distillation equipment reported dismantled and removed.

Remarks: This is the largest plant in France. Photos available. Dutch prospectus of the company in 1939 showed 1,530,144 tons of crude treated in 1938. 56 tanks burned by French in June 1940 and some pump houses and control rooms damaged. 3 B. and W boilers 180,000 #/hr. 3 generators 3,300 kw. each.

97. Standard Francaise SOCONY — Port Jerome, France

Common Name of the Refinery: Port Jerome

Name of Company: Standard Francaise des Petroles

Address of Company: 82 Avenue des Champs Elysees, Paris

Affiliations of Company: Standard Oil Co. (N.J.) Atlantic Refining Co. Gulf Oil Corp.

Location of Refinery: On right bank of the Seine River at a spot called Port Jerome a few miles from Notre Dame de Gravenchon (SI) and directly across the river from Quillebeuf. The refinery is contiguous to the smaller Vacuum Oil Refinery.

Capacity in metric tons per year: 1,250,000 accepted based on records of crude throughput. 1,200,000 tons handled in 19[illegible] Other figures 1,250,000 (a), 1,260,000 (b), 1,100,000 (z)

Distillation Facilities: Two 2-stage pipe stills @ 10,000 B/D each. Lube rerun pipe still. Naphtha rerun still. Asphalt shell stills.

Cracking Facilities: Three 1000# Kellogg units @ 4-15,000 B/D each.

Lube Facilities: Phenol solvent extraction plant for about 3000 B/D. Solvent dewaxing plant (8 Nobel centrifuges) for about 1000 B/D. Clay treating plant for about 1900 B/D.

Tankage Capacity in metric tons: 240,000 accepted. Other figures 240,000 (a), 300,000 (aa), 359,000 (cc), 307,000 (gg)

Damage and Demolition: Tanks destroyed completely. Some dismantling. Two cracking coils removed. (Intelligence says all three)

Remarks: This had the second largest crude capacity, and was one of the most complete refineries in France. Worked in conjunction with the white oil refinery upstream at La Mailleraye. 5 B and W boilers 187,000 # 1 hr. 3 generators 7,000 kw total.

Common Name of the Refinery: Vacuum

Name of Company: Raffineries de la Vacuum Oil Co. S.A.F.

Address of Company: 46, rue de Courcelles, Paris

Affiliations of Company: Socony-Vacuum Oil Co. New York

Location of Refinery: On right bank of Seine river near village of Notre Dame de Gravenchon (SI) and across the river from Quillebeuf (Eure). The refinery is contiguous to and to the east of the larger Standard refinery of Port Jerome.

Capacity in metric tons per year: 300,000 accepted. Other figures 210,000 (a), 300,000 (b), 250,000 (z)

Distillation Facilities: Two 2-stage FW pipe stills @ 3,000 B/D each

Cracking Facilities: Kellogg unit for 3,500 B/D

Lube Facilities: Duosol solvent extraction unit for 960 B/D

Tankage Capacity in metric tons: 80,000 according to (aa), 199,000 (ee)

Damage and Demolition: Tanks destroyed except for 2,000 M^3 capacity. Compounding and barrelling plant destroyed. Some dismantling.

Remarks: This refinery lies against the Standard refinery in a great expanse of open fields. The two units are separated only by a wire fence and from the air would look like a single plant except for the separate docks. Supposed to have sent lube equipment to Trzebinja, Poland or Kagran Austria. 3 B. and W. boilers. 3 generators 3,000 kw each.

99 Standard Francaise

Common Name of the Refinery: La Mailleraye

Name of Company: Standard Francaise des Petroles

Address of Company: 82 avenue des Champs Elysees, Pari

Affiliations of Company: Standard Oil Co. (N.J.)
Atlantic Refining Co.
Gulf Oil Corporation.

Location of Refinery: On right bank of Seine River at Le Trait downstream from Rouen about 18 miles

Capacity in metric tons per year: 80,000(BI) does not handle crude.

Distillation Facilities: None

Cracking Facilities: None

Lube Facilities: White oil treating, wax finishing

Tankage Capacity in metric tons: 30,000 (BI)

Damage and Demolition: Damage restored completely.

Remarks: This is simply a white oil plant receiving oil fractions from refin
Jerome.

100 Petrole Jupiter-Shell — Petit Couronne (Rouen), France

Common Name of the Refinery: Petit Couronne

Name of Company: Jupiter [illegible] des Petroles

Address of Company: 42, rue Washington, Paris (VIII)

Affiliations of Company: Shell Oil Co.

Location of Refinery: Petit Couronne is six miles down stream from Rouen on the left bank of the Seine.

Capacity in metric tons per year: 750,000 is the figure given by (a) (b) and (c). Other figures are 700,000 (h) and 800,000 (z).

Distillation Facilities: Two topping units good for 1300-1500 T/D each. Naphtha rerun, lube and asphalt vacuum stills, etc.

Cracking Facilities: Dubbs cracker for 700 T/D and reformer for 300 T/D. Cracking and reforming capacity 300,000 T/yr (ff).

Lube Facilities: Acid and clay treating units for 125 T/D and Edeleanu solvent extraction unit for 100 T/D.

Tankage Capacity in metric tons: 210,000 the accepted figure, may be low. Other figures are 335 M^3 (c), 280 M^3 (h), 300 (z), 317 (ee), 335 M^3 (ff).

Damage and Demolition: Tanks destroyed in large part. Some dismantling reported.

Remarks:

101. Consommateurs de Petrole — Donges (St.Nazaire) France

Common Name of the Refinery: Consommateurs

Name of Company: Les Consommateurs de Petrole

Address of Company: 9, Avenue Percier, Paris (VIII)

Affiliations of Company: Independent

Location of Refinery: On N. bank of Loire river in the outskirts of the village of Donges which is upstream about 10 miles from St. Nazaire. Alongside the larger Pechelbronn-Ouest refinery.

Capacity in metric tons per year: 130,000 accepted. Other figures are 130,000 (a), 175,000 (b), 100,000 (q) 140,000 (z)

Distillation Facilities: Two Foster Wheeler pipe stills for 1500 B/D each

Cracking Facilities: None

Lube Facilities: RR grease plant

Tankage Capacity in metric tons: 45,000 accepted although Rev. Petrolif. shows 55,000. Other figures: 45,000 (aa), 50,000 (cc)

Damage and Demolition: Bombed in 1940

Remarks: This refinery and its tankage is so close to the corresponding equipment of the Pechelbronn-Ouest refinery that they would appear to merge into one unit.

102. Pechelbronn Ouest — Donges (St. Nazaire) France

Common Name of the Refinery: Pechelbronn Ouest

Name of Company: Pechelbronn-Ouest S.A.

Address of Company: , rue Roussel, Paris

Affiliations of Company: "Pechelbronn" S.A. d'Exploitations Minieres.

Location of Refinery: On N. bank of Loire river in the outskirts of the village of Donges which is upstream about 10 miles from St. Nazaire. Alongside the smaller Consommateurs refinery.

Capacity in metric tons per year: 250,000 accepted. Other figures: 220,000 (a), 250,000 (b), 240,000 (q), 180,000 (z), the builder, Winkler-Koch, states the actual crude capacity at 4500 B/D.

Distillation Facilities: Combined skimming, cracking and reforming Winkler-Koch unit.

Cracking Facilities: Two heating coils in about unit, one for light and other for heavy gas oil.

Lube Facilities: None

Tankage Capacity in metric tons: 60,000 according to (aa), 54 (ee)

Damage and Demolition: Bombed in 1940.

Remarks: Completely new refinery, construction starting in 1934. See letter from Winkler-Koch. Has gas fractionating facilities and own boiler and power house.

103. Petroles Jupiter-Shell ..... Pauillac (Bordeaux) France

Common Name of the Refinery: Pauillac

Name of Company: Jupiter SA des Petroles

Address of Company: 42, rue Washington, Paris (VIII)

Affiliations of Company: Shell Oil Co.

Location of Refinery: On the left bank of the Gironde river about 10 miles downstream from the confluence of the Garonne and Dordogne rivers. About 30 miles NNW of Bordeaux, between the villages of Mousset and Trompeloup at 2 miles distance from Pauillac.

Capacity in metric tons per year: 500,000 used, as given by (a), (b) and (h). Other figures: 600,000 (c), 550,000, 600,000 (ff).

Distillation Facilities: McKee crude pipe still for 1800 B/D

Cracking Facilities: Dubbs two stage cracker for 300 T/D. Dubbs reformer for 300 T/D. Cracking and reforming capacity 300,000 T/yr (ff)

Lube Facilities: None

Tankage Capacity in metric tons: 180,000 is the figure used and may be low. Other figures: 280,000 (c), 200,000 (aa), 255,000 M^3 (h), 215,000 (cc), 280,000 M^3 (ff).

Damage and Demolition: Part of tankage destroyed.

Remarks: This is a simple refinery without facilities for numerous products other than gasoline, gas oil and fuel oil.

104. Gironde-Texas — Bec d'Ambes (Bordeaux) France

Common Name of the Refinery: Bec d'Ambes

Name of Company: Societe des Raffineries de Petrole de la Gironde

Address of Company: Paris

Affiliations of Company: Texas Company, New York

Location of Refinery: Downstream and about 15 miles from Bordeaux on the point of land at the confluence of the Garonne and Dordogne rivers.

Capacity in metric tons per year: 350,000 based on 350,000 (a), 315,000 (b) 220,000 (z).

Distillation Facilities: Kellogg topping unit, 6500 B/D

Cracking Facilities: Kellogg and Dubbs cracking units, 2500 B/D and 2000 B/D respectively.

Lube Facilities: None

Tankage Capacity in metric tons: 120,000 accepted. Rev. Petrol. shows 160,00 M3, other figures 118,000 (aa), 144,000 (ee).

Damage and Demolition: Considerable portion of tankage destroyed by bombing.

Remarks: This refinery is confined to gasoline, gas oil and fuel oil manufacture. Only 36,500 M3 tankage left of original 160,000 M3 (y), besides 4,800 M3 lube storage of original 16,000 M3. 3 boilers (1700 M2 total). 1 - 625 kw generator.

105. C.I.P. Socony-Vacuum — Frontignan (Sete) France

Common Name of the Refinery: Frontignan

Name of Company: Compagnie Industrielle des Petroles

Address of Company: 54, rue de Londres, Paris

Affiliations of Company: Socony-Vacuum Oil Co. New York

Location of Refinery: Near Frontignan, 4 miles NE of Sete. The refinery is just S of Frontignan and along the W side of the railroad tracks, partly on filled ground.

Capacity in metric tons per year: 300,000. Other figures 200,000 (a), 300,000 (b), 250,000 (x)

Distillation Facilities: F.W. pipe still for 6000 B/D. Kellogg rerun still for 1600 B/D.

Cracking Facilities: 3500 B/D Kellogg cracker and reformer

Lube Facilities: Dewaxing facilities transferred from Gravenchon

Tankage Capacity in metric tons: 106,000 as reported by Soc.Vac. Other figures: 100,000 (x), 70,000 (aa), 106,000 (ee), 118,000 (hh)

Damage and Demolition: None

Remarks: Simple skimming and cracking plant. Now supposed to be running 1300 T/mo. of shale oil distillates from Autun (y), and on grape seed oil. Completely shut down in 1945 (x). 4 B and W boilers (190 M^3 each). 3 Diesel electric generators, 600 cv total.

106. Compagnie Francaise de Raff. Martiques (Marseille) France

Common Name of the Refinery: Martiques

Name of Company: Compagnie Francaise de Raffinage

Address of Company: 9, Square de Messine, Paris (VIII)

Affiliations of Company: French Government

Location of Refinery: Near Martiques which is 25 miles W NW of Marseilles on the south shore of the Etang de Berre. The refinery is actually at La Medo, 3 miles E of Martiques and just N of the highway.

Capacity in metric tons per year: 650,000 accepted based on equipment manufacturers statement. Other figures: 600,000 (a), 1000,000 (b), 650,000 (q), 8-1200,000(x), 900,000 (z).

Distillation Facilities: 7,000 B/D F.W. topper. 800 T/D McKee crude pipe still. 500 T/D McKee rerun unit.

Cracking Facilities: 12,000 B/D Kellogg cracker and reformer. 2,800 B/D reformer.

Lube Facilities: None

Tankage Capacity in metric tons: 150,000 was the figure in 1937. Other figures: 250 (x), 300 (AA), 171 (ee)

Damage and Demolition: Very slight damage by bombing.

Remarks: Some equipment taken by Germans. 3 Ladd boilers - 150,000 #1 hr.

107. Raffinerie de Berre — Berre (Marseille) France

Common Name of the Refinery: Berre

Name of Company: Compagnie des Produits Chimiques et Raffineries de Berre

Address of Company: 76, rue de Prony, Paris (XVII)

Affiliations of Company: Societes des Manufactures de Glace et Produits Chimiques de Saint Gobain, Chauney et Cirey.
Societe des Petroles Tonoline.

Location of Refinery: Near Berre which [illegible] miles NW of Marseilles on the north shore of the Etang de Berre. The refinery is about 1½ miles NE of the town of Berre, on the S side of the road 39.

Capacity in metric tons per year: 550,000 based on 580,000 (a), 550,000 (b), 350,000 (q), 600,000 (x), 500,000 (z)

Distillation Facilities: Brunn Konigsfeld pipe still

Cracking Facilities: Kellogg cracker for 2500 B/D. Houdry unit partly completed in 1942.

Lube Facilities: Acid treating and dewaxing

Tankage Capacity in metric tons: 170,000 based on 172,000, 250,000 (x) 170,000 (aa), 159,000 (ee)

Damage and Demolition: None

Remarks: Not composed of most modern type equipment. Partly dismantled for shipment east. Equipment for synthetic lubes from resin installed in 1943. Still operating in small way on lubes.

Common Name of the Refinery: L'Avera

Name of Company: Societe Generale des Huiles de Petrole

Address of Company: 19, rue de la Bionfaisance

Affiliations of Company: Anglo-Iranian Oil Co., Ltd. London

Location of Refinery: L'Avera, near Martigues, which is 20 miles NW of Marseilles on north shore of the Etang de Berre. The refinery is on the N side of the canal just W of where the railroad crosses it, halfway between Martigues and Port de Bouc.

Capacity in metric tons per year: 400,000 probably low based on 470,000 (a), 400,000 (b), 380,000 (q), 400,000 (x), 550,000 (z)

Distillation Facilities: 12,500 B/D Kellogg topper and primary cracker. 2100 B/D 2-stage rerun unit. Alco built vacuum pipe still for 4500 B/D reduced crude.

Cracking Facilities: As above plus 1500 B/D high pressure Kellogg cracker. 4000 B/D Kellogg reformer, and 1500 B/D catalytic reformer.

Lube Facilities: None

Tankage Capacity in metric tons: 150,000 in 1937. Other figures: 222,000 (x), 190,000 (aa), 211,000 (ee).

Damage and Demolition: None

Remarks: Dutch prospectus showed 458,234 tons of crude treated in 1938. 8 boilers. 5 - 600 kw Diesel electric generators.

109. Lyonnaise Schistes Bitumineux

Common Name of the Refinery: Autun

Name of Company: Societe Lyonnaise des Schistes Bitumineux

Address of Company: 3, rue de Messine, Paris (VIII)

Affiliations of Company: Independent

Location of Refinery: At Les Thelots, 3 miles [illegible] of Autun (Saone et Loire) and not far from the steel works of Le Creusot. The refinery in two parts: retorts in the south, oil refinery in north part.

Capacity in metric tons per year: 15,000 is the figure used, based on the limited amount of shale produced, although McKee claims to have installed a shale oil pipe still good for 350 T/D.
Other figure: 40,000 (z)

Distillation Facilities: McKee steam heated rerun still for 350 T/D to produce cracked gasoline from shale oil.

Cracking Facilities: 2000 B/D Dubbs cracker installed in 1935-36. The heater installed by Foster-Wheeler. Fresh feed only about 400 B/D.

Lube Facilities: Formerly produced black lubes.

Tankage Capacity in metric tons: 11,000 (y)

Damage and Demolition: None

Remarks: There are three batteries of 40 pumpherston retorts each, handling about 1000 T/yr each of shale running 8% oil, or 10,000 T/yr oil.

110. Pechelbronn — Merkwiller (Pechelbronn) France

Common Name of the Refinery: Pechelbronn

Name of Company: "Pechelbronn" SA d'Exploitations Minieres

Address of Company: 32, Allee de la Robertsau, Strasbourg

Affiliations of Company: Independent. Has control of P.E.N., Brest, Petrolier, Soc. des Huiles Antar, etc.

Location of Refinery: Pechelbronn (Bas Rhin) near Merkwiller

Capacity in metric tons per year: 120,000 based on 120,000 (a), 125,000 (b), 110,000 (q), 130,000 (z)

Distillation Facilities: Eight shell stills, 6 under vacuum, plus coke still for bottoms and vacuum lube rerun stills.

Cracking Facilities: Wolf Carburol cracker for 25,000 T/yr.

Lube Facilities: Acid and clay treating. Solvent centrifuge dewaxing (Sharples) and 22 filter presses.

Tankage Capacity in metric tons: 60,000 Other figures 80,000 (aa), 80,000 (bb)

Damage and Demolition: None

Remarks: Drilling is mostly around Holschloch. The plant is 3 sections: Lampertschloch, containing the cracking, crude dehydration, naphtha distillation and crude oil storage; Merkwiller, containing the power plant, lube distillation, dewaxing and intermediate tankage; Kutzenhausen, containing the crude distillation and covered tanks.

111 Redeventza — Antwerp-Kiel, Belgium

Common Name of the Refinery: Redeventza

Name of Company: "Redeventza" S.A. Belge pour le Raffinage de Petrole

Address of Company: Antwerp-Kiel

Affiliations of Company: Rumanian

Location of Refinery: Antwerp-Kiel on the Scholdt river

Capacity in metric tons per year: 150,000, 130,000 (a), 150,000 (b), 140,000 (q), 130,000 (s), 130,000 (z).

Distillation Facilities: Foster-Wheeler pipe still

Cracking Facilities: None

Lube Facilities: No Lubes

Tankage Capacity in metric tons: 46,000 (s)

Damage and Demolition: Partly destroyed, tanks damaged.

Remarks:

Common Name of the Refinery: Atlas

Name of Company: Compagnie Industrielle "Atlas" S.A.

Address of Company: Antwerp

Affiliations of Company: SOCONY

Location of Refinery: Antwerp-Hoboken

Capacity in metric tons per year: 100,000, 100,000 (a), 75,000 (b), 100,000 (x)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 14,000

Damage and Demolition: May have been damaged

Remarks:

113 Raff. & Dist. Aversoises "Radian" Antwerp-Kiel, Belgium

Common Name of the Refinery: Radian

Name of Company: Raffineries et Distilleries Aversoises S.A. "Radian".

Address of Company: Antwerp

Affiliations of Company:

Location of Refinery: Antwerp-Kiel

Capacity in metric tons per year: 50,000, 50,000 (a), 100,000 (b), 70,000 (q), 30,000 (s), 50,000 (z).

Distillation Facilities: Pipe still

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 200,000 (s)

Damage and Demolition:

Remarks: Connected with T and T bulk station

Common Name of the Refinery: Belgo Petroleum

Name of Company: Belge Petroleum S.A.

Address of Company: Brussels

Affiliations of Company:

Location of Refinery: Ertvelde

Capacity in metric tons per year: 65,000, 100,000 (a), 60,000 (b), 10,000 (z)

Distillation Facilities: None

Cracking Facilities: Cracking unit for about 100,000 T/yr.

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks:

111 Lianosoff-Raff. Belge — Antwerp, Belgium

Common Name of the Refinery: Raffinerie Belge

Name of Company: Raffinerie Belge de Petroles

Address of Company: Antwerp

Affiliations of Company: British Lianosoff Co.

Location of Refinery: Antwerp

Capacity in metric tons per year: 130,000, 140,000 (s), 170,000 (z).

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 70,000 ( )

Damage and Demolition:

Remarks: Asphalt refinery

Common Name of the Refinery: Belgian Shell

Name of Company: Belgian Shell Co.

Address of Company: Ghent

Location of Refinery: Ghent-Wondelgem

Capacity in metric tons per year: 130,000, 130,000(a), 130,000(b), 130,000(c), 60,000(s), 85,000(z), 85,000(dd), 130,000 (ff)

Distillation Facilities: Shell stills
Vacuum pipe still

Cracking Facilities:

Lube Facilities: Grease Manufacturing facilities

Tankage Capacity in metric tons: 44,000(e) and (ff)

Damage and Demolition:

Remarks: Equipment brought in from Louan refinery for original construction. Supposed to supply U-boats on French coast.

Common Name of the Refinery: Belgian Cracking

Name of Company: Belgian Cracking Co. S.A.

Address of Company: Brussels

Affiliations of Company: --

Location of Refinery: Ghent-Langerbrugge

Capacity in metric tons per year: 20,000; 30,000(a), 35,000(b), 60,000(c), 20,000(z).

Distillation Facilities: None

Cracking Facilities: Dubbs unit for short 17,000 T/yr.

Lube Facilities:

Tankage Capacity in metric tons:

Damage and Demolition:

Remarks:

Common Name of the Refinery: Bat.-Shell-Pernis

Name of Company: NV de Bataafsche Petroleum Maatschappij

Address of Company: The Hague

Affiliations of Company: Shell

Location of Refinery: Pernis, about 7 miles WSW

Capacity in metric tons per year: 1,100,000;900,000(a), 250,000(b), 1,100,000(c), 660,000(z), 660,000(dd), 1,100,000(ff).

Distillation Facilities: Pipe still, topping and vacuum

Cracking Facilities: Lubes units for 550,000 T/yr, (ff)

Lube Facilities:

Tankage Capacity in metric tons: 900,000, 695,000(c), 567 M^3(ff)

Damage and Demolition: Partly destroyed

Remarks: Lummus cracking furnace. Iso-octane facilities. Asphalt plant. Repaired to some extent after Allied raids. Regenerating used lubes at about 400 T/mo in 1945.

Common Name of the Refinery: Flushing

Name of Company: N.V. Vlissingsche Minerale olie en Asphalt Raffinaderij

Address of Company: Flushing

Affiliations of Company:

Location of Refinery: Flushing

Capacity in metric tons per year: 40,000; 12-58,000(a)

Distillation Facilities: Shell stills

Cracking Facilities: None

Lube Facilities:

Tankage Capacity in metric tons: 60,000

Damage and Demolition: May have been destroyed

Remarks: Good aerial photos, Jun '45.

Common Name of the Refinery: Vallo

Name of Company: Norsk Amerikansk Mineraloljo compagni A.S.

Address of Company: Vallo

Affiliations of Company: SOCAL

Location of Refinery: Vallo

Capacity in metric tons per year: 50,000; 50,000(a), 42,000(b), 41,000(z).

Distillation Facilities: Shell stills, atospheric and vacuum

Cracking Facilities: None

Lube Facilities: Lube and grease making equipment

Tankage Capacity in metric tons: 25,000

Damage and Demolition: Partly bombarded.

Remarks: Asphalt manufacturing facilities:

Common Name of the Refinery: Kalundborg

Name of Company: A/S Dansk Shell

Address of Company: Kalundborg, Denmark

Affiliations of Company: 3000 J

Location of Refinery: Kalundborg

Capacity in metric tons per year: 20,000, 20,000(a), 14,000(b),

Distillation Facilities: Steam still

Cracking Facilties: None

Lube Facilities:

Tankage Capacity in metric tons: 6200 (a)

Damage and Evolution:

Remarks: