

# SECRET

Enemy Oil Committee  
Western Axis Subcommittee

## Estimated Refinery Output in Axis Europe - January Through June 1944

This semester saw the inauguration of a serious attack upon the crude oil refining industry of Europe - a belated follow-up of the bombing of Ploesti last August. The effect of this year's attack was felt as early as May so that, for the first half of 1944, the total refinery capacity was not much greater than required for the crude oil produced. Actually the disruption of traffic and the sudden requirement for crude oil transport is estimated to have caused a shut-back of Rumanian crude in the amount of 550,000 tons during this period although theoretically there was unused refinery capacity for 719,000 tons. The probable distribution of crudes among refineries is shown in the attached Table I.

The products made from the crudes run were in about the same percentages as formerly. However a disproportionately high loss of cracking capacity in Rumania is estimated to have reduced the percentage of gasoline from Rumanian crude to only 25% in July, with a corresponding increase in the percentages of diesel and fuel oil. The products made from crude, as compared to normal times, were as follows, in thousands of metric tons for the six months period:

|                         |                                |
|-------------------------|--------------------------------|
| Gasoline                | 1211 made versus 1439 normally |
| Kerosene and Diesel Oil | 1061 made versus 1177 normally |
| Lubes                   | 370 made versus 387 normally   |
| Fuel Oil                | 1028 made versus 1165 normally |

The production from each of the crudes is shown in the attached Table II.

As regards the production in July, an estimate has been made as shown in Tables II and III, although it is understood that even as this is written the situation is undergoing a change, since the attacks on refineries are continuing. The refinery capacities in July are shown individually in Table IV. It is to be remarked that at the present writing Poland has the greatest operable refinery capacity at 80,000 tons per month, and Czechoslovakia the next greatest capacity at 45,000 tons per month. It would appear to be most important to maintain the German, Rumanian, Austrian and Italian refineries out of the picture (they can usually be back in full operation two months after a bombing unless the pipe stills and boiler houses are hit) and as far as possible to bomb the undamaged Polish and Czech refineries. It should also be borne in mind that Fernis, near Rotterdam, is alone capable of handling all the German crude if it is permitted to start up and operate; also that a small but convenient source of supplies exists uncollected at Pechelbroun in France.

TABLE I

January - June 1944 Distribution of Axis Crude Among Refineries  
(Thousands of Metric Tons)

|                 | Rated<br>Refinery<br>Annual<br>Crude<br>Capacity | Jan-June<br>Cap'y | Local<br>Crude | Cap'y<br>for<br>Import<br>Crude | Crude<br>Import | Extra<br>Capacity | Crude<br>Run | Gasoline    | Kero. & D.O. | Products Made<br>Lubes | Fuel Oil    |
|-----------------|--------------------------------------------------|-------------------|----------------|---------------------------------|-----------------|-------------------|--------------|-------------|--------------|------------------------|-------------|
| Germany         | 1800                                             | 900               | 431            | 469                             | 469             | --                | 900          | 144.0       | 216          | 166                    | 283         |
| Austria         | 600                                              | 280               | 796            | -516                            | --              | --                | 280          | 28          | 92           | 56                     | 81          |
| Czechoslovakia  | 700                                              | 350               | 15             | 335                             | 47              | 288               | 62           | 6.2         | 19.8         | 12.4                   | 18.3        |
| Yugoslavia      | 220                                              | 100               | 25             | 75                              | 75              | --                | 100          | 24          | 45           | 4                      | 18          |
| Hungary         | 620                                              | 300               | 400            | -100                            | --              | --                | 300          | 72          | 135          | 12                     | 54          |
| Italy           | 2250                                             | 470*              | 5              | 465                             | 34              | 431               | 39           | 12.7        | 13.9         | 1.3                    | 6.6         |
| Romania         | 9605                                             | 1800**            | 2094***        | -294                            | --              | --                | 1800         | 748.2       | 377.1        | 53.7                   | 414         |
| Poland          | 970                                              | 485               | 200            | 285                             | 285             | --                | 485          | 158         | 128          | 32.6                   | 119         |
| Estonia         | 95                                               | 50                | 50             | --                              | --              | --                | 50           | 5.5         | 20           | -                      | 22          |
| France, Holland | 95                                               | <u>53</u>         | <u>53</u>      | <u>--</u>                       | <u>--</u>       | <u>--</u>         | <u>53</u>    | <u>12.2</u> | <u>13.8</u>  | <u>11.7</u>            | <u>12.2</u> |
|                 |                                                  | 4788              | 4069           | 719                             | 910             | 719               | 4069         | 1210.8      | 1060.6       | 369.7                  | 1028.1      |

\* Assuming Marghera and Spezia available 4 months, Aquila and SIAP 5 months and Roma and Forno 6 months.

\*\* Assuming 4800 rate Jan.-April, 2000 rate May and 400 rate June.

\*\*\* Assuming crude shutback of 550,000 tons in May and June due to disrupted traffic.

TABLE II

AXIS OIL PRODUCTION 1944  
(Thousands of Metric Tons)

| Crude Source    |          | <u>Crude</u> | <u>Gasolines</u> | <u>Kero. &amp;<br/>Diesel</u> | <u>Lubes</u> | <u>Fuel Oil</u> |
|-----------------|----------|--------------|------------------|-------------------------------|--------------|-----------------|
|                 |          |              | 97.0             | 65.4                          | 92.0         | 146.5           |
| Germany         | Jan-June | 431.0        | -                | -                             | -            | -               |
|                 | July     | 71.7*        | -                | -                             | -            | 251.0           |
| Austria         | Jan-June | 796.0        | 79.6             | 255.0                         | 159.0        | 14.0            |
|                 | July     | 162.0**      | 4.6              | 15.0                          | 9.1          | 4.4             |
| Czechoslovakia  | Jan-June | 15.0         | 1.5              | 4.8                           | 5.0          | 0.7             |
|                 | July     | 2.4          | 0.2              | 0.6                           | 0.6          | 4.5             |
| Yugoslavia      | Jan-June | 35.0         | 6.0              | 11.0                          | 1.0          | 0.6             |
|                 | July     | 4.1          | 1.0              | 1.5                           | 0.2          | 72.0            |
| Hungary         | Jan-June | 400.0        | 96.0             | 180.0                         | 16.0         | 13.0            |
|                 | July     | 66.6         | 16.0             | 30.0                          | 2.7          | 0.5             |
| Italy           | Jan-June | 5.0          | 1.0              | 1.0                           | -            | 0.1             |
|                 | July     | 0.9          | 0.5              | 0.2                           | -            | -               |
| Rumania         | Jan-June | 2094.0       | 870.0            | 440.0                         | 63.0         | 481.0           |
|                 | July     | 110.0        | 25.2             | 55.2                          | 3.3          | 33.5            |
| Poland          | Jan-June | 200.0        | 40.0             | 68.6                          | 24.0         | 64.0            |
|                 | July     | 33.3         | 6.7              | 11.4                          | 4.0          | 9.0             |
| Estonia         | Jan-June | 60.0         | 6.6              | 20.0                          | -            | 22.0            |
|                 | July     | 8.0          | 0.9              | 3.2                           | -            | 3.5             |
| France, Holland | Jan-June | 53.0         | 12.2             | 13.8                          | 11.7         | 14.2            |
|                 | July     | 8.9          | 2.0              | 2.3                           | 3.0          | 2.0             |
| Totals          |          | 4069.0       | 1210.6           | 1060.6                        | 369.7        | 1028.1          |
|                 |          | 467.9***     | 87.3             | 100.3                         | 21.7         | 76.6            |

\* Stored for lack of refining facilities.  
 \*\* Only 45.7 refined, due to lack of refining facilities; 118.3 stored.  
 \*\*\* Of which only 279.9 refined; 188.0 stored.

## TABLE III

July 1944 Distribution of Axis Crude Among Refineries  
(Thousands of Metric Tons)

|                  | <u>Crude</u> | <u>July Ref'y</u><br><u>Capacity</u> | <u>Ref'y</u><br><u>Shortage</u> | <u>Crude</u><br><u>Imports</u> | <u>Crude</u><br><u>Stored</u> | <u>Crude</u><br><u>Run</u> | <u>Gasoline</u> | <u>Products Ratio</u> |            |      |
|------------------|--------------|--------------------------------------|---------------------------------|--------------------------------|-------------------------------|----------------------------|-----------------|-----------------------|------------|------|
|                  |              |                                      |                                 |                                |                               |                            |                 | <u>Gas.</u>           | <u>Oil</u> |      |
| Germany          | 71.7*        | 0                                    | 71.7                            | -                              | 71.7                          | 0                          | 0               | 0                     | 0          | 0    |
| Austria          | 182.0*       | 35                                   | 127.0                           | -                              | 116.3                         | 35                         | 5.6             | 11.2                  | 7.0        | 10.1 |
| Czechoslovakia   | 2.4          | 45                                   | 442.6                           | 42.6                           | -                             | 45                         | 9.0             | 18.5                  | 3.7        | 9.6  |
| Yugoslavia       | 4.1          | 8                                    | 43.9                            | 3.9                            | -                             | 8                          | 1.9             | 3.5                   | .4         | 1.4  |
| Hungary          | 66.6         | 15                                   | 61.6                            | -                              | -                             | 15                         | 3.6             | 6.7                   | .6         | 2.7  |
| Italy            | 0.9          | 30                                   | 429.1                           | 29.1                           | -                             | 30                         | 7.4             | 11.6                  | 1.0        | 7.0  |
| Rumania          | 110.0**      | 50                                   | 60                              | -                              | -                             | 50                         | 11.4            | 16.8                  | 1.8        | 18.8 |
| Poland           | 33.3         | 80                                   | 446.7                           | 46.7                           | -                             | 80                         | 17.4            | 26.8                  | 5.5        | 23.7 |
| Estonia          | 0.0          | 0                                    | -                               | -                              | -                             | 0                          | .9              | 3.2                   | -          | 3.3  |
| Finland, Holland | 8.9          | 8.9                                  | -                               | -                              | -                             | 8.9                        | 2.1             | 2.3                   | 2.0        | 2.1  |
| Total            | 487.9        | 279.9                                | 188.6                           | 172.3                          | 188.0                         | 279.9                      | 57.2            | 100.3                 | 21.7       | 75.6 |

\* Assuming no crude shutback.

\*\* Assuming 330,000 tons shutback in July.

THIS PAGE IS UNCLASSIFIED

TABLE IV

JULY REFINERY CAPACITY BASED ON INFORMATION TO JULY 15

| <u>Refinery</u>              | <u>Annual Rating</u> | <u>Attacks Made in 1944 and Damage sustained</u>                                      | <u>Annual Rate in July 1944's Metric Tons</u> |
|------------------------------|----------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| <u>Germany</u>               |                      |                                                                                       |                                               |
| Chemical Werke               | 550                  | Twice in June. Distillation, boiler house & other units, severe.                      | 0                                             |
| Eben Asphalt                 | 400                  | Twice in June. Probably set afire. Shut down probable.                                | 0                                             |
| Europäische Tank             | 400                  | Twice in June. Distillation and boiler house, probable, other units severe.           | 0                                             |
| Deurag                       | 300                  | Three times in June. Distillation, probable; boiler house severe; other units severe. | 0                                             |
| Meerag                       | 150                  | Once in June. Distillation and boiler house, severe.                                  | <u>0</u><br>0                                 |
| <u>Austria</u>               |                      |                                                                                       |                                               |
| Shell Floridsdorf            | 100                  | Twice in June, once in July. Only minor damage noted.                                 | 100                                           |
| Creditul Minier (Korneuburg) | 50                   | Once in June, once in July. Pilot reports good results.                               | 50                                            |
| Vacuum Oil Co. (Eggen)       | 60                   | Twice in June. boiler house and other units very severe.                              | 0                                             |
| Osterreichische (Vasendorf)  | 40                   | Twice in July. Pilot reports good results.                                            | 40                                            |
| Kova-Schwechat               | 50                   | Once early in year, twice in June. Boiler house slight, other units severe.           | 0                                             |
| Wintershall-Lobau            | 200                  | Twice in June. Not severe.                                                            | <u>200</u><br>390                             |
| <u>Czechoslovakia</u>        |                      |                                                                                       |                                               |
| A-110-Bratislava             | 150                  | Once in June. Distillation, boiler house and other units, very severe.                | 0                                             |
| Others                       | 550                  | None                                                                                  | <u>550</u><br>550                             |
| <u>Yugoslavia</u>            |                      |                                                                                       |                                               |
| Standard-Brod                | 100                  | Once in June, twice in July. Distillation and boiler house, severe                    | 0                                             |
| Shell-Caurag                 | 100                  | Once in June. Pilot reports good coverage.                                            | 100                                           |
| Inoil-Osijek                 | 40                   | Once in June. Distillation, boiler house, etc. very severe.                           | 0                                             |
| Grederevo                    | 50                   | Once in June. Distillation, probable, other units, severe.                            | <u>0</u><br>100                               |

SECRET

TABLE IV (Cont'd)

| <u>Refinery</u>         | <u>Annual Rating</u> | <u>Attacks Made in 1944 and Damage sustained</u>                    | <u>Annual Rate in July 1944 in 100's metric tons</u> |
|-------------------------|----------------------|---------------------------------------------------------------------|------------------------------------------------------|
| <u>Rumania (Cont'd)</u> |                      |                                                                     |                                                      |
| Frachova                | 200                  | Once early, once in June, once in July. Boiler houses, etc. severe. | 0                                                    |
| Photocsa-Brasov         | 35                   | Once early, once in May, once in July. Distillation etc. severe.    | 0                                                    |
| Others                  | 105                  | Once each month since April                                         | 200<br>300                                           |
| <u>Poland</u>           |                      |                                                                     |                                                      |
| Pelmin-Drohobycz        | 100                  | Once in June. Unknown; temporary shut down possible.                | 100                                                  |
| Balta-Drohobycz         | 60                   | Once in June. Unknown; temporary shut down possible.                | 60                                                   |
| Belicja-Drohobycz       | 140                  | Once in June. Unknown; temporary shut down possible.                | 140                                                  |
| Others                  | 610                  | None                                                                | 610<br>970                                           |
| <u>Estonia</u>          | 100                  | None                                                                | 100                                                  |
| <u>France</u>           |                      |                                                                     |                                                      |
| Pechelbronn             | 80                   | None                                                                | 80                                                   |
| Autun                   | 10                   | None                                                                | 10<br>90                                             |
| <u>Holland</u>          |                      |                                                                     |                                                      |
| Fernis                  | 1100                 | None                                                                | 1100                                                 |

**SECRET**

# TABLE IV (Cont'd)

| <u>Refinery</u>               | <u>Annual Rating</u> | <u>Attacks Made in 1944 and Damage Sustained</u>                                                | <u>Annual Rate in July 1944's Metric Tons</u> |
|-------------------------------|----------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <u>Hungary</u>                |                      |                                                                                                 |                                               |
| Csepel                        | 175                  | Once early, twice in June, once in July. Distillation, probable; boiler house severe.           | 0                                             |
| Hegyer Petrolena              | 60                   | Once early                                                                                      | 60                                            |
| Aevanyol Panto                | 50                   | Once in June. Distillation minor; boiler house, etc., severe                                    | 0                                             |
| Yacuzzi Oil Co. (Almasfuzito) | 125                  | Once in June, once in July. Boiler house a-fire, other units minor.                             | 0                                             |
| Hungarian Hydro. (Petfardó)   | 100                  | Once in June. Power house and other units severe.                                               | 50                                            |
| Others                        | 100                  | Once in June. Szony badly hurt. Szoregi. very severe.                                           | 80<br>190                                     |
| <u>Italy</u>                  |                      |                                                                                                 |                                               |
| Isola (Ancona)                | 130                  | Four times early. Minor units severe.                                                           | 120                                           |
| Aquila-Trieste                | 350                  | Once early, twice in June, once in July. Distillation and boiler house, severe                  | 0                                             |
| SIAP (Trieste)                | 150                  | None                                                                                            | 150                                           |
| Marghera (AGIP)               | 450                  | Once in May, three times in June, once in July. Vital units, slight.                            | 50                                            |
| INPET-Shell (Spezia)          | 330                  | Once in May. Distillation very severe.                                                          | 0                                             |
| Petrolifera-Torino Taro       | 5                    | Once in June. Very severe.                                                                      | 0<br>350                                      |
| <u>Romania</u>                |                      |                                                                                                 |                                               |
| Astra Romana                  | 1750                 | Once early, twice in May, once in June. Distillation and boiler houses, partly.                 | 0                                             |
| Concordia "Tara"              | 1450                 | Twice early, once in June, once in July. Distillation partly; boiler house, severe              | 0                                             |
| S. Romana                     | 1300                 | Once early, once in May. Distillation and boiler house, slight. Inactive since 1943.            | 0                                             |
| Romana Americana              | 1170                 | Once early, once in May, three times in June, once in July. One boiler house, plus July damage. | 0                                             |
| Unirea Orion                  | 730                  | Once early, once in May. Distillation and boiler houses, very severe.                           | 0                                             |
| Unirea Speranta               | 440                  | Once early, once in May. Distillation, severe.                                                  | 200                                           |
| Petrol Block                  | 435                  | Once early, once in May. Distillation and boiler house, severe.                                 | 200                                           |
| Colombia Aquila               | 535                  | Once early. Inactive since 1943. Expected to run soon.                                          | 0                                             |
| Dacia                         | 120                  | Once in May, once in June, once in July                                                         | 0                                             |
| Xenia                         | 290                  | Once in May, once in June, twice in July                                                        | 0                                             |
| Credit Minier (Brasi)         | 535                  | Once early. Inactive since 1943. Not expected to start up.                                      | 0                                             |